youth SKILLS

Report on the role of critical information skills in recognising mis- and disinformation

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Report on the role of critical information skills in recognising mis- and disinformation

Work Package 6 – Deliverable 6.3

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European Commission

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Executive summary

Online mis- and disinformation poses threats to societies and individuals, and young people form a group that may be particularly vulnerable to the potential negative consequences of exposure to such false information on the internet and on social media. Therefore, digital skills, news literacy, and particularly the skills that allow them to evaluate the credibility of online news and information and to distinguish between true and false, have become increasingly essential.

This report presents the findings from a multi-method study about young people's (12 to 15 years old) skills to cope with online mis- and disinformation in three countries: Belgium, the Czech Republic, and Finland. Through an online survey, a news exposure phase comprising a credibility evaluation performance test, and focus groups, this study aimed (1) to gain more insight into how 12- to 15-year-olds understand and engage with online news; and (2) to assess to what degree they are able to differentiate between truths and falsehoods and how they arrive at these judgments, and to understand the role of digital skills in these processes.

The findings show that social media constitute young people's main way of keeping up to date with current events, followed by more traditional news channels such as television and radio. The findings particularly illustrate the strong position of public service media in this news landscape: across the entire sample, the news from sources associated with the public broadcaster was seen as the most reliable. While the participants' survey responses suggest they perceived their information navigation and processing skills, which include credibility evaluation skills, to be the lowest of all digital skill dimensions outlined in the youth Digital Skills Indicator (yDSI; Helsper et al., 2020[1]), overall they reported good scores on the credibility evaluation performance test, with the majority of participants with valid responses arriving at correct credibility judgements.

The participants in this study generally had a good awareness of the presence of mis- and disinformation on the internet and on social media, and of the importance of credibility evaluation skills to build resilience and to avoid being misled by such falsehoods. However, it seemed that their knowledge about significant credibility cues, or elements of the news message that signal credibility, sometimes remained rather superficial and limited to source and visual cues, and their awareness regarding elements that were less on the surface and less straightforward did not always emerge from the focus group discussions.

The findings from this study suggest that existing news literacy and credibility evaluation interventions seem to be effective, as the participants generally reported correct credibility evaluations in the performance test and showed good knowledge relating to online news credibility during the focus groups. However, we would like to highlight the importance of a continuing allocation of resources to the stimulation of information navigation and processing skills in order to tackle skills and knowledge that stimulate attention to less straightforward or superficial credibility cues. Lastly, it is important to note that in stimulating credibility evaluation skills, we should also be wary of potential adverse effects relating to increased scepticism about mainstream news media and young people turning to unreliable alternative sources instead.

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[1] For more information about the yDSI: https://zenodo.org/record/4608010#.YranHnZBxPZ

ySKILLS

THE ROLE OF YOUNG PEOPLE'S CRITICAL INFORMATION SKILLS IN RECOGNIZING MIS- AND DISINFORMATION

AIMS

- Gain and enhance insight into how young people understand and engage with online news.
- Assess to what degree they are able to differentiate between truths and falsehoods, how they arrive at these judgments, and understand the role of digital skills in these processes.

STEP BY STEP

online survey **+** performance tests **+** focus groups

- Youth Digital Skills Indicator (yDSI).
- News Literacy Scale.

12 news items
(6 true and 6 false).

TOTAL
250 young people
12 to 15-year-olds.

WHERE
Belgium
Finland
The Czech Republic

UNDERSTANDING OF AND ENGAGEMENT WITH ONLINE NEWS

Main channels for following the news

social media   television   online news sites

Most and least reliable ✔

Although social media are the main way of keeping up to date, young people perceive them as the least reliable ones.
News items associated with public broadcasters are the most reliable.

SKILLS AND STRATEGIES FOR EVALUATING NEWS CREDIBILITY

Perceived and reported skills

Information navigation and processing skills were the lowest recognised skills of the yDSI.

Young people report confidence on their news literacy skills.

They also present good scores on the credibility evaluation performance test.

"Learning by doing"

Young people are familiarizing themselves with tracking, datafication, and commercialisation practices based on their daily experiences on social media and search platforms.

They are aware of mis- and disinformation* on the internet and report the role of credibility evaluation skills to avoid being misled.

Lack of self-confidence and knowledge of the digital environment

Vague understanding of algorithmic curation, recommendation, and personalization for non-advertising content, particularly news.

Superficial and limited knowledge of credibility cues of the news

Young people mainly consider the source and visual cues of the news items.
They tend to ignore elements that are less on the surface and less straightforward (e.g. the undertone of the message…).

*Both mis and disinformation have false information but disinformation has the intention to cause harm.

As mis- and disinformation are increasingly disguised as correct and reliable information, further development of young people's skills that aid in recognizing the more subtle elements of a message that points towards a correct credibility evaluation has become crucial.

ySKILLS

1   Introduction

1.1   The ySKILLS project

The ySKILLS (Youth Skills) project is funded by the European Union (EU's) Horizon 2020 programme. It involves 15 partners from 13 countries to enhance and maximise the long-term positive impact of the information and communications technology (ICT) environment on multiple aspects of wellbeing for children and young people by stimulating resilience through the enhancement of digital skills. Starting from the view that children are **active agents in their own development**, ySKILLS examines how digital skills mediate the risks and opportunities related to ICT use by 12- to 17-year olds in Europe (see https://yskills.eu).

> **The overarching aim of ySKILLS**
>
> To enhance and maximise the long-term positive impact of the ICT environment on multiple aspects of wellbeing for all children by stimulating resilience through the enhancement of digital skills.

ySKILLS will **identify the actors and factors** that undermine or can promote **children's wellbeing** in a digital age. The relations between ICT use and wellbeing will be critically and empirically examined over time.

> **ySKILLS' research objectives**
>
> To acquire extensive knowledge and better measurement of digital skills.
>
> To develop and test an innovative, evidence-based explanatory and foresight model predicting the complex impacts of ICT use and digital skills on children's cognitive, physical, psychological and social wellbeing.
>
> To explain how at-risk children (as regards their mental health, ethnic or cultural origin, socioeconomic status and gender) can benefit from online opportunities despite their risk factors (material, social, psychological).
>
> To generate insightful evidence-based recommendations and strategies for key stakeholder groups in order to promote European children's digital skills and wellbeing.

This report contributes to achieving objective 3 by focusing on children and young people in a specific risk situation, i.e., online mis- and disinformation. More specifically, this report presents the findings about young people's digital skills in relation to their coping with online mis- and disinformation. Based on this empirical evidence, we will present implications for information literacy and digital skills education in ways that transcend polarities of less-skilled vs. media-savvy children and adolescents, at the backdrop of a children's rights perspective in the digital environment (e.g., freedom of information, access to diverse and quality media).

ySKILLS has proposed, and will continue to develop, its **conceptual model** (see Figure 1):

Figure 1. ySKILLS CONCEPTUAL MODEL
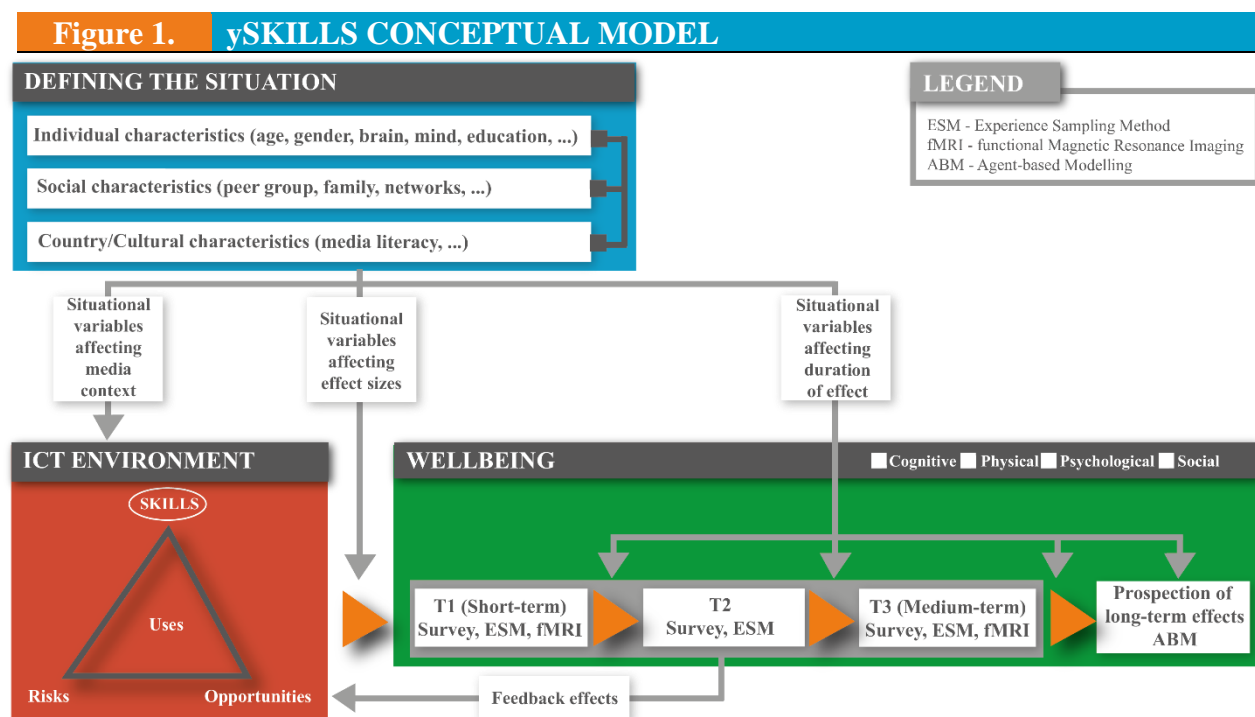
1.2 This report

The ySKILLS project aims to gain a better understanding of the digital skills that are necessary for European 12- to 17-year-olds to critically engage with ICTs, to be able to benefit from their ICT use, and to build resilience against potential harm from negative online experiences. Against this backdrop, the research within Work Package 6 places a special focus on the digital skills of at-risk youths based on vulnerabilities relating to their mental health, ethnic or cultural origin, socioeconomic status, and gender, and on the digital skills that are needed within specific risky situations, such as online misinformation.

This report presents the findings from Task 6.2, which aims (1) to gain and enhance insight into how 12- to 15-year-olds understand and engage with online news; (2) to assess to what degree they can differentiate between truths and falsehoods and how they arrive at these judgements, and to understand the role of digital skills in these processes.

To this end, an innovative multi-method research design is set up in three countries: Belgium, Finland, and the Czech Republic. In this report, we present the findings and analysis of an online within-person experiment and focus group discussions that aimed to capture youths' credibility assessment skills of online news, the processes that lead to these assessments, and the role of digital skills and psychosocial factors in these processes.

The introductory section of this report aims to bring conceptual clarity in several key topics related to online news and misinformation. Then, the innovative methodology and the findings from the study are presented. Based on these results we provide some reflections and recommendations for various stakeholders involved in promoting digital skills among young people.

2   Background

In recent years, mis- and disinformation and their potentially detrimental effects for individuals and for democratic societies have gained increasing attention from academics, policy makers, and other stakeholders (Alcott & Gentzkow, 2017; Nielsen et al., 2020). Within the EU, significant resources have been mobilised to address information credibility and to mitigate the spread of online mis- and disinformation, such as the "Action plan against disinformation" or the "EU code of practice on disinformation", and the new "Digital services act" (European Commission, 2018a, 2018b, 2022). Alongside initiatives that aim to counter the spread of mis- and disinformation such as legislation and content moderation efforts, experts propose that digital skills are valuable for protecting individuals against the potentially harmful effects of mis- and disinformation (ERGA, 2021). Digitally skilled individuals possess the skills that are necessary to safely and effectively navigate the internet and social media, and to avoid the potentially negative consequences (such as being misinformed) their internet and social media use, by being critical about the credibility of information or by being aware of news media ownership.

In this context, digital skills may be especially relevant for young people for three reasons. First, for this age group, online platforms and social media constitute their preferred means of staying up-to-date with the news (Van Damme, Janssens, & Van Hende, 2022). However, it is on these platforms that mis- and disinformation are most often shared (Bradshaw & Howard, 2019), and young people therefore have a high risk of being exposed to such falsehoods or in furthering the spread of mis- and disinformation by (often unknowingly) sharing information that turns out to be false within their networks. Second, while their digital skills should not be underestimated, young people may still be vulnerable to the consequences of mis- and disinformation. During this time in their lives, their cognitive development is still in progress and judging the credibility of information is a complex cognitive task (Eastin, 2008). As such, young people may be more vulnerable to being misled by mis- and disinformation because they lack the necessary cognitive capacities to distinguish between true and false information. Third, mis- and disinformation mainly affect attitude formation, and attitudes ultimately inform and guide behaviour. Previous research has shown that political attitudes formed during the teenage years are relatively strong and persist well into adulthood (Hooghe & Wilkenfeld, 2008). It is therefore of paramount importance that these attitudes are not based on false or misleading information.

2.1   Defining mis- and disinformation

Misinformation and disinformation are part of a wider range of "information disorders", which can be described as false information that is published online and that could be misleading to users. Also considered to be information disorders, but different from mis- and disinformation are for instance propaganda (Guess & Lyons, 2020) and conspiracy theories (Wittenberg & Berinsky, 2020), among others (Wardle & Derakshan, 2017; Wardle, 2019). While misinformation is generally understood as "information that is false, but not created with the intention of causing harm" (Wardle & Derakhshan, 2017, p. 20), disinformation concerns "content that is intentionally false and designed to cause harm" (Wardle, 2019, p. 8). We refrain from the term "fake news", as it has become a biased term over the years and rather than denoting false news stories, the term has also been employed by several politicians to describe news media that they disagree with (Farkas & Schou, 2018).

Evidence of the real-world, harmful consequences of mis- and disinformation is growing. For instance, on the individual level, potential negative effects of mis- and disinformation for public health management were illustrated during the COVID-19 pandemic, when consuming false and misleading anti-vaccine conspiracies led to dangerous health behaviours, a decline in vaccination intentions (Enders et al., 2020; Lee et al., 2020) and to more anxiety and depression among the public (De Coninck et al., 2021). Additionally, mis- and disinformation relating to climate change has been

linked to decreased trust in science (Ranney & Clark, 2016), and trust in journalism (Mayerhöffer et al., 2022; National Literacy Trust, 2018). On the societal level, mis- and disinformation can pose a threat to democratic societies, as it has often been linked to increased polarisation, violence against minorities, and decreased trust in politics (European Commission, 2018a; Farkas & Schou, 2019; Howard, Neudert, Prakash, & Vosloo, 2021).

2.2 Building resilience to online risks through digital skills

Digital skills are often proposed as a safeguard against the potential negative consequences of their internet use and as protective for their wellbeing within this context of online risk (Haddon et al., 2020). Digital skills are defined as "the ability to use ICTs in ways that help individuals to achieve beneficial, high-quality outcomes in everyday life for themselves and others, now and in an increasingly digital future. They comprise the extent to which one is able to increase the benefits of ICT use and reduce potential harm associated with more negative aspects of digital engagement" (International Telecommunication Union, 2018, p.23). Digital skills are multi-dimensional. Within the ySKILLS project, we distinguish between five types of digital skills, as proposed in the youth Digital Skills Indicator (Helsper et al., 2020):

- Technical and operational skills refer to the ability to operate digital devices.
- Programming skills concern individuals' ability to use a programming language.
- Information navigation and processing skills relate to the ability to find, select, and critically evaluate information.
- Communication and interaction skills refer to the ability to use digital media to communicate with others and to evaluate the impact of digital communication on others.
- Content creation and production skills relate to the ability to create digital contents and to understand how such contents are produced and published.

Research has consistently found that higher digital skill levels are linked to more online risk experiences (Haddon et al., 2020; Mascheroni, Cino, Mikuska, Lacko, & Smahel, 2020). This link between digital skills and online risk is not direct, but instead occurs indirectly via online opportunities, which are online activities that are beneficial for young people's lives and wellbeing, such as activities related to learning, communication, or participation. Young people who have higher levels of digital skills generally take up more online opportunities – and therefore spend more time online, and these opportunities are in turn a predictor for online risk experiences (Cabello-Hutt, Cabello, & Claro, 2018; Haddon et al., 2020; Livingstone & Helsper, 2010).

However, the fact that digital skills are linked to more online risks does not automatically imply that these young people also experience more harmful outcomes from these risks. While it is certainly possible that young people report feeling bothered or upset after a negative online experience, this is not always the case. According to a recent survey from the EU Kids Online network, on average 25% of children and young people across Europe indicate having experienced something online that left them feeling bothered or upset (Smahel et al., 2020). This finding indicates that the majority of young people are able to look after themselves online and hence display a certain degree of online resilience to negative outcomes from online risks. Online resilience is understood as "being able to deal with a negative experience online: i.e., not remaining passive but displaying problem-solving coping strategies in order to protect oneself from future harm" (Vandoninck, d'Haenens, & Roe, 2013, p. 60). Effective coping behaviours can vary from changing privacy settings or blocking a person to talking with friends or parents or seeking online social support (Vandoninck & d'Haenens, 2015; Vandoninck et al., 2013).

While research into the role of digital skills in building resilience against online risks is scarce, some studies have found that young people with higher digital skill levels were found to be more successful at coping with online risk experiences and hence at avoiding negative outcomes that result from these risk experiences, compared to young people with lower digital skill levels (Vandoninck, d'Haenens, & Donoso, 2010; Vandoninck et al., 2013).

News literacy could aid in young people's abilities to identify online mis- and disinformation. News literacy is defined as "knowledge of the personal and social processes by which news is produced, distributed, and consumed, and skills that allow users some control over these processes" (Vraga et al., 2021, p.5). By applying this knowledge and these skills into news literacy behaviours, it is argued that individuals may benefit maximally from their news use while building resilience against potential negative consequences, such as being misled by false information that is shared online.

2.3 Aims of the current research

Previous research has uncovered and described the value of digital skills as safeguards of young people's wellbeing in the face of online risks, as these skills allow them to develop online resilience and coping strategies that aid them in avoiding potential negative outcomes of these risk experiences. This research aims to add to the literature by studying young people's critical information skills in relation to a specific type of online risk: online mis- and disinformation.

More specifically, the aims of the current study are the following:

1. To gain and enhance insight into how 12- to 15-year-olds understand and engage with online news;
2. To assess to what degree they are able to differentiate between truths and falsehoods and how they arrive at these judgments, and to understand the role of digital skills in these processes.

3 Methodology

3.1 Data and sample

We conducted a multi-method study consisting of two phases: (1) online survey with news exposure, and (2) focus groups with young people between 12 and 15 years old in three European countries: Belgium, the Czech Republic, and Finland. These countries were selected based on their different scores on the Media Literacy Index (Lessenski, 2021). While Finland is at the top of the Media Literacy Index, Belgium scored average, and the Czech Republic was situated among the lower-scoring countries.

The data collection took place in secondary schools located in the vicinity of the universities that are involved in the research to ensure the feasibility of the intensive data collection activities. To recruit schools willing to participate in the study, we took a two-step sampling approach. First, schools were contacted with information about the research and a request to participate in the study. Second, schools that were interested in participating in the research proposed teachers that would let the students participate in the study during their classes. Due to the Covid-19 restrictions, data collection took place either physically in classrooms or in an online classroom during distance learning.

The descriptive overview of the sample is presented in Table 1.

Table 1.	Sample description by country			
	Belgium	Czech Republic	Finland	**Total**
Phase 1: Online survey and news exposure				
N	93	88	76	257
Mean age (SD)	13.49 (1.30)	13.99 (.70)	14.55 (1.05)	13.98 (1.13)
% girls	37.6	54.5	68.4	52.5
Number of schools	3	4	1	8
Phase 2: Focus groups				
N	103	70	71	244
Number of focus groups	16	13	17	46

3.2 Procedure

In May 2021, before the actual data collection started, a youth consultation was held in Finland to assist researchers in gaining a more comprehensive understanding of youth digital experiences in order to further develop research themes and methodology. 16 ninth-grade students (15-16 years old) participated in the youth consultation. Two 45-minute meetings were arranged by Finland's researchers during an English class in the school auditorium with these students. Data were collected in two stages during meetings: (1) an online survey used as a qualitative research method (Braun et al., 2021) was coupled with (2) a semi-structured, open discussion. In both stages of the consultation, participants were encouraged to use English and Finnish languages. Students' own mobile phones were used to collect data for the survey, and the mobile version of SurveyMonkey was used as the platform. The group discussion with all 16 participants together was conducted immediately after they completed the online questionnaire. The discussion was mainly a reflection on their survey answers. Based on the findings of the youth consultation, it was possible to make recommendations for elaborating methodologies of both phases of the actual study.

The data collection for this study took place between October 2021 and February 2022. An innovative multi-method study design was set up, consisting of two phases, one quantitative and one qualitative,

through which we aimed to gain rich insights into young people's credibility evaluation skills and strategies. In this section, we elaborate on the design of the two phases.

During the first phase of the research, we aimed to study young people's credibility evaluation skills and strategies using a quantitative approach. This first phase of the research consisted of two parts. The first part concerned an online survey in Qualtrics of about 25 minutes that the participants could complete on their smartphones. Upon opening the survey, which was possible by scanning a QR code projected on the screen or by typing the survey link in their (mobile) browsers, the first screen of the survey contained information about the study and ethical information such as the anonymity of the data and the fact that there was no obligation to answer questions they did not want to answer. Next, the participants were asked a selection of questions from the longitudinal ySKILLS school survey and additional questions that were of relevance to the current study. More specifically, the survey questions touched upon the following themes:

- Socio-demographic characteristics, such as age, gender, and socio-economic status
- Internet and social media use
- Digital skills, measured using the yDSI (Helsper et al., 2020)
- News use, trust in news, and news literacy, measured using the News Literacy Scale (Ashley, Maksl, & Craft, 2013)
- Experiences with cyberhate
- Psychological characteristics, such as bystander reactions and affective empathy

A complete overview of the survey questions can be found in Appendix 1.

The second part of the first phase of the research concerned a news exposure phase which aimed to assess the participants' credibility evaluation skills. More specifically, during this phase, the participants were shown twelve screenshots of news messages on news sites and on social media. Six of these messages were real news stories, the other six news messages were fabricated by the research team. Based on the literature on online news and information credibility, we selected four elements of the message that would be manipulated to signal fabricated and hence false news messages created by the research team. These elements were:

- News source: a well-known and reliable news source versus an unknown and unreliable news source
- Goal of the message: information versus persuasion
- Pictures: good quality and neutral versus bad quality and sensational
- Language and spelling: correct, professional, and neutral versus containing mistakes and biased

The news messages were first set up in English and later translated to Dutch, Czech, and Finnish by the research teams. An overview of these twelve news messages (in English) is attached in Appendix 2. Each of the news messages was concerned with the topic of cyberhate, which is an issue that many young people are faced with and exposed to online today (Machackova et al., 2020). Cyberhate attacks people due to their group membership or group characteristics (Cohen-Almagor, 2011; Hawdon et al., 2017). Specifically, the participants in our study were presented news stories on cyberhate based on sexual orientation and weight. We also included stories about youth cyberviolence.

The participants received the news messages in an app that was designed specifically for this study. To maximise their attention to the news messages and to mimic the fragmented nature of this age

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group's online news use (Costera Meijer & Groot Kormelink, 2015), the participants were exposed to these news messages during four exposure moments, each containing three news messages and taking about ten to fifteen minutes, over the course of two or three school days. The participants were provided the news message along with additional background information, for instance a screenshot of the social media profile that posted the message, containing information about the number of posts and followers. Next, using the Message Credibility Scale (Appelman & Sundar, 2016), they were asked to evaluate the credibility of the message by indicating how well three words fit with the message they just saw: accurate, authentic, and believable. The researchers made sure to translate these words to their national languages using a synonym that would be easy enough to understand for the participants. Additionally, the participants were asked which elements of the news message aided them in their credibility evaluations. During the first two moments, this was an open question to avoid priming any responses. During the last two moments, we provided the participants with a list of the most commonly mentioned elements of a news message (news source, title, pictures or videos, page layout and design, references to sources of information, language and spelling, the number of likes, comments, and/or shares) that aid credibility evaluations in order to avoid repetition and loss of motivation to finish the questions. Lastly, the respondents were asked whether they would share the news message with their peers and through which social media platform they would do this. For two news messages, one about cyberbullying based on weight, and one about online harassment in games based on gender, we asked additional questions relating to hypothetical reactions to the situation, if it were to happen in real life to someone in their close networks.

To link the participants' responses from the Qualtrics survey to their responses in the app, the participants were asked to create a unique identification code at the beginning of the Qualtrics survey. In order for them to be able to remember their codes and to prevent a loss of data, we proposed that the codes consist of the first three letters of their last name, the first three letters of the street they live on, and the numbers indicating the day of their birthday. Later, the participants were asked to login in the app using this same code they created at the start of the study. In this way, we could link the responses across the survey and the four news exposure moments using the unique identifying codes the participants created for themselves.

The data collection for the quantitative phase was completed in Finland in late October 2021, followed by Czech Republic in December 2021, and Belgium in January 2022. The fieldwork done in Finland allowed for the research team to identify and to solve some technical problems encountered when students were downloading the app needed for the second part of quantitative phase. Data collection in Finland also suggested for other countries that there is a need for more detailed and precise guidelines for students how to create identification codes needed for the data analyses to link Qualtrics survey to the responses in the app.

The second phase of the study was of a qualitative nature and aimed to deepen the findings from the first phase using focus groups, as these group discussions are valuable to explore the ways in which young people understand a particular issue (Lunt & Livingstone, 1996). A list of questions was put together to guide the discussions (discussion guide is included in Appendix 3). This discussion guide (included in Appendix 3) included questions on news use, the news messages shown during the first phase of the study, reliability of news sources, online mis- and disinformation, and algorithmic awareness about social media. Each focus group consisted of 2 to 8 participants (the number of participants varied due to projected numbers of participants not always being present due to the Covid-19 measures). At the beginning of each discussion, information about the study and ethical aspects relating to the focus groups in particular, such as the pseudonymisation of the data and the

absence of an obligation to answer), were shared with the participants. The audio of the focus groups was recorded. Each discussion took between 35 and 45 minutes each.

3.3 Data handling and data analysis

3.3.1 Quantitative data

For each country separately, the survey data were exported from Qualtrics and the news exposure data were exported from the app. The identification codes that were created by the participants were compared between the Qualtrics dataset and the app dataset and those who had matches in both datasets were retained, as some identification codes in Qualtrics could not be found among the app users or vice versa (see Table 2).

Table 2.	Number of participants across Qualtrics and app			
	Belgium	Czech Republic	Finland	**Total**
N Qualtrics	126	132	76	334
N app	102	97	50	249
Number of matches	93	88	24	205

Note: Only participants who participated in at least two news exposure moments are included in the total number of app participants. The reduced number of matches in Finland may be explained by technical issues resulting in problems with identification codes created by students during the data collection.

Before merging the Qualtrics data and app data, a check was performed to make sure all codes in both datasets were identical (e.g., in terms of letter capitalisation, spaces, etc.) to avoid duplicates in the final merged dataset. When all codes were identical across the two datasets, the Qualtrics dataset and the app dataset were merged using the identification codes as identifying variables. The merged dataset was cleaned. This procedure was carried out for each country separately and it was made sure that all variable names and labels were identical in each country dataset to facilitate the final merging into one dataset containing all three countries. In the last step, the individual country datasets were merged into one final dataset.

3.3.2 Qualitative data

The audio of the focus group discussions was recorded. Using these audio recordings, the focus groups were transcribed word for word in the language in which the discussion took place. Information that could lead to identification of the participants was anonymized during the transcription process to ensure the privacy of the participants. After the recordings were transcribed, they were deleted.

We performed a thematic analysis in three steps to examine the focus group transcripts. First, each research team performed open coding on their individual transcripts to arrive at a first level of codes. These codes originated exclusively from the transcripts, as no codebook was established prior to the analysis of the transcripts. Second, the teams reread the transcripts and combined the first levels codes into higher level categories and subcategories using selective coding. The categories, subcategories, and individual codes were summarised by each team in one preliminary overview, which was then shared between the teams in order to see similarities and differences. In the third step, the codes from each country team were compared, discussed, and adjusted if necessary. Next, we combined them into one codebook that allows for a discussion of the findings across focus groups and across the countries and that allows for special attention to differences between focus groups and countries. All coding took place in English to facilitate the comparison of the findings between the countries.

4   Findings

In the first section, we will present the findings related to the first aim of the research, which was gaining insight in young people's understanding of and engagement with online news. Next, we discuss the findings on young people's credibility evaluation skills and strategies in response to the second aim of the research. Findings from the focus group discussions are used to further deepen and explain the results from the survey and news exposure phase.

4.1   Young people's understanding of and engagement with online news

The findings relating to the participants' internet use, social media use, and news use are presented in Table 3. On average, the respondents in all three countries said they spent quite some time online (between 4 and 5 hours per day) and on social media (multiple times each day). Internet use was highest among Belgian participants, while social media use was highest among Finnish students. The participants' news use was slightly lower, averaging 2.60 on a five-point scale. Participants in the Czech Republic on average used news the most (2.68) in comparison with young people from Finland (2.59) and Belgium (2.53).

These findings regarding lower degrees of news use in Belgium were also reflected in the focus group discussions. Several participants admitted they "never" followed the news, others said they only follow the news "sometimes".

> P: "I don't even follow the news. I actually don't care at all about all that" (Boy, 10th grade, Belgium)
>
> M: "And why not?"
>
> P: "I have never found it interesting to watch. I actually don't care at all what is happening in other countries"

Only a smaller number of participants said they kept up to date the news regularly. Personal interest and personal relevance seemed to be important drivers of news use:

> P: "It's important if it somehow influences me, but if it doesn't influence me that I don't care about it."
>
> M: "What does influence you, for instance?"
>
> P: "For example the government of this state influences me." (Boy, 8th grade, Czech Republic)

It is important to note, however, that the participants may have held different definitions of news use than the research team. For most of them, news use meant actively seeking out news by watching it on television or looking it up online. However, when further discussing news on social media, a number of participants admitted that they were actually exposed to news quite often on these platforms, but they generally did not actively seek these news messages and instead were incidentally exposed to them in social media "stories" or while scrolling through their feeds:

> P: "Well, I don't look for it online myself, but I see the news, for example, in stories." (Boy, 8th grade, Finland)

Their actual news use per day may hence be higher than what is reported during the survey due to undeliberate, incidental exposure to news that the participants in this study did not consider to be the same as more "active" news consumption (such as turning on the television to watch the evening news or surfing to a dedicated news site):

> P1: "I am satisfied with the news I get from, I don't know, TikTok, Instagram, sometimes listening to it on the radio, rather than watching it." (Boy, 9th grade, Belgium)

M: "So you encounter news on social media, but you are not following it actively?"

P1: "No".

M: "[…] Does anyone else experience the same thing, that you do encounter the news?"

P2: "Just on Instagram and things like that, you encounter it sometimes, but it is not like I am looking for it myself or something". (Boy, 9th grade, Belgium)

M: "Yes."

P1: "Yes, I am not looking for news actively. When I encounter it, I will sometimes take a look at it, but not like…"

"Well, I open Google and I have news there so I read what it offers me. (Girl, 9th grade, Czech Republic)

Table 3.	Internet use, social media use, and news use			
	Belgium	Czech Republic	Finland	**Total**
Internet use[2]	6.56 (2.37)	6.40 (1.79)	6.27 (1.65)	6.42 (1.96)
Social media use[3]	4.71 (1.10)	4.64 (1.14)	4.76 (1.08)	4.70 (1.11)
News use[4]	2.53 (.99)	2.68 (.88)	2.59 (.90)	2.60 (.93)

Note: Means (standard deviations).

To gain a further understanding of the participants' news use practices, we asked them about the various channels through which they stayed up to date with the news. Table 4 presents an overview of the participants' preferred media channels to stay up to date with the news.

Table 4.	News use channels[5]			
	Belgium	Czech Republic	Finland	**Total**
Television	2.69 (1.23)	2.40 (1.08)	2.49 (.89)	2.53 (1.09)
Radio	2.60 (1.15)	1.51 (.78)	2.03 (.96)	2.05 (1.08)
Printed newspapers	1.34 (.62)	1.28 (.54)	2.15 (1.06)	1.55 (.84)
Online news sites	2.17 (1.01)	2.31 (1.08)	3.00 (.96)	2.45 (1.08)
Digital newspapers	1.41 (.76)	2.17 (1.01)	2.39 (1.09)	1.96 (1.04)
News apps	1.39 (.77)	1.75 (.94)	1.86 (1.15)	1.65 (.97)
Social media	3.08 (1.24)	3.13 (1.20)	3.96 (.82)	3.35 (1.18)

Note: Means (standard deviations).

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[2] Internet use: "How much time do you spend on the internet during a regular weekday (a school day)?". (1) Little or no time – (9) About 7 hours or more.

[3] Social media use: "In the past month, how often have you communicated on the internet with friends or parents (e.g., via Messenger, email, WhatsApp, Facebook, Instagram, etc.)". (1) Never – (6) Almost all the time.

[4] News use: "About how long do you spend following the news during a regular weekday (i.e., school day)? By news, we mean reporting on societal or political events." (1) Never – (5) Almost all the time.

[5] News use channels: "How often do you follow the news in the following ways?" (1) Never – (5) Almost all the time.

Across the entire sample and within each country, social media are the most popular means of following the news, followed by television, radio, and online news sites. Printed newspapers, digital newspapers, and news apps were the least popular among the young people in our sample in all three countries to stay up to date with current events. Meanwhile, according to survey data, these channels were more popular among Finland's students compared to their counterparts in the two other countries, with a most significant difference in the use of printed newspapers. Also data from focus groups in Finland confirms that, in addition to other channels, some of students still read newspapers to keep up with current events:

> P: "I watch the news every day and I read the paper in the morning. Sometimes I look up stuff online… I usually read Helsingin Sanomat or Kauppalehti." (Boy, 9th grade, Finland)
>
> M: "How do you access this type of information, especially related to the news?"
>
> P: "Well, we get the paper and I watch the news or look it up on my phone."

The popularity of social media for news use also emerged from the focus group discussions. A large majority of the participants said that they got their news mainly from social media. More traditional channels such as television and radio are also popular news channels.

> M: "Where do you usually get information from?"
>
> P1: "Mostly from Instagram." (Girl, 9th grade, Czech Republic)
>
> P2: "From TikTok." (Girl, 9th grade, Czech Republic)
>
> P3: "Television." (Boy, 9th grade, Czech Republic)
>
> P4: "From Google." (Girl, 9th grade, Czech Republic)

Even though social media were among the most popular channels for young people to receive updates about the news, various participants expressed concerns about the reliability of the information that is shared on these platforms.

> M: "Which source do you consider unreliable?"
>
> P: "Facebook... and people on Facebook who think they know everything." (Girl, 8th grade, Czech Republic)

Influencers on social media are also mentioned as unreliable sources of information:

> M: "What then would be the most unreliable sources to look up information?"
>
> P: "Instagram influencers. For example, if they share something and don't have a link to the source in the Instagram direct, I wouldn't trust that information." (Girl, 9th grade, Finland)

While their opinions regarding the reliability of more traditional news varied, a majority of the participants indeed seemed to agree that they should be critical of the information they see on social media:

> P1: "I used to look [during the news exposure phase in the app] whether it… On social media I almost never trust it, even if it is from someone I know, uhm, even if it is VRT [the public broadcaster] who is sharing it because even then it can still be fake." (Girl, 9th grade, Belgium)
>
> M: "Okay. And do you think about this with every message that you see, when scrolling through Instagram for example?"
>
> P1: "I never look at the news on social media because I don't trust it."

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M: "Okay, no. Is there anyone else who would like to add something to this?"

P2: "Yes, I almost never believe anything that is on social media, actually." (Girl, 9th grade, Belgium)

A "channel" that was not included in the answer options in the survey but that was repeatedly mentioned during the focus group discussions concerns the social environment of young people. Next to getting news updates through media, family, friends, and teachers at school were repeatedly mentioned as important sources through which they received information about current events.

"I don't watch the news at all, I get information from my parents, and for example I learned about the covid lockdown from a lady on a bus." (Girl, 9th grade, Czech Republic)

"Sometimes I watch the news in the evening, and then if I hear about something, like if my mum tells me something." (Girl, 8th grade, Finland)

Indeed, especially for the younger participants, conversations with parents about the news seems to be an important way of coping with news that may be upsetting:

"The news about Russia is discussed there [on the YouTube channel for "NOS Jeugdjournaal", a Dutch news broadcast that is aimed at children and young people], so I watched it so I could follow what happened. And then I asked for a bit more information from mom and dad, I asked "should I be scared of this?". Because, this is a special war, […], so I asked my mom whether I should be scared of it. And they said "yes and no. You are allowed to be scared of it, but you shouldn't be". So in that way I learn about those things." (Girl, 7th grade, Belgium)

As social media are young people's most used means of keeping up to date with the news, Table 5 sheds light on the uses of specific social media platforms for news use. Across the entire sample, Instagram, YouTube, and TikTok were the most popular social media platforms for the participants to follow the news. This pattern was largely reflected in the three countries. In Finland, Snapchat and WhatsApp emerged as additional popular news use platforms, highlighting the communicative nature between two people or small groups next to the sharing of news to a larger, impersonal audience on platforms such as TikTok, YouTube, and Instagram.

According to the results of the survey, Instagram is the most popular platform for young people to stay up to date with the news in the Czech Republic and Belgium. The focus group discussion confirmed these findings. Instagram pages specifically targeting a youth audience emerged as popular sources of news for the participants in these countries. These Instagram pages were run by the public broadcaster (in Belgium), or by a young politician (in the Czech Republic).

According to the responses of some students from Finland, where Instagram is the second most popular platform, they follow news via legacy media Instagram accounts:

"For instance, if you follow Aamulehti or Iltalehti on Instagram, they usually have links to everything, so if any particular article catches your interest, you can find and read the article through the link. Generally, I follow *Ilta-Sanomat*, *Iltalehti* and *Amulehti*, even *Helsingin Sanomat*." (Girl, 9th grade, Finland)

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Next to Instagram, YouTube was another popular platform for staying up to date with the news. For instance, in the Czech Republic, a large number of the participants get information about the news by watching weekly news summaries from a popular Czech YouTuber:

> "I'd watch Herdyn [the Czech YouTuber], he has a show called WoLe so I find my information there. He has everything on vaccination there and he says what has happened in the past week." (Boy, 8th grade, Czech Republic)

According to the findings, TikTok is the most popular news channel for teenagers in Finland, and it was frequently mentioned as a platform where young people encountered news also in the Czech Republic and Belgium. The participants, on the other hand, were less confident in the accuracy of information on TikTok, and were generally critical and sceptical of what they saw on the platform.

> P1: "I find that, on social media, also on Twitter but actually everywhere, on Instagram, Snapchat, people sometimes share news on there. I don't have that, but I've heard about from people. And then on Instagram and TikTok, there is a lot of fake news being shared on there. The advantage of TikTok is that, if you don't like it, you won't get to see it." (Boy, 9th grade, Belgium)
>
> M: "Okay. Do other people make this distinction as well?"
>
> P2: "I find that Instagram is a bit more reliable than TikTok. On Instagram I will look whether it is something that a lot of people are following or a news site or something I know. I find TikTok less reliable then, unless it is a real news site, but then I will first check whether it is the real news site." (Girl, 9th grade, Belgium)

A participant from Finland noted that often the news that is widely shared on TikTok can be created with the aim to attract attention:

> "Often if I read news, for example, on TikTok, it may have been exaggerated or blown out of proportion and it may have also been coloured a bit. If it has been shared a lot."

While the survey findings showed that platforms such as Reddit and Discord were used much less, the focus groups suggest that, while not many participants were on these platforms, those that were active used it to get news relating to specific topics, such as games, in specific communities and discussion for a specific turn on these topics.

> M: "Is there someone who follows the news on social media?"
>
> P1: "On Reddit." (Girl, 9th grade, Belgium)
>
> […]
>
> M: "And Reddit, I haven't heard that one a lot in other discussions. In what way do you follow the news there?"
>
> P1: "For games. Yes, to get updates about different games."

Table 5.	News use on social media[6]			
	Belgium	Czech Republic	Finland	**Total**
Facebook	1.14 (.44)	1.14 (.38)	1.18 (.57)	1.15 (.46)
Instagram	2.44 (1.42)	3.03 (1.33)	2.97 (1.13)	2.80 (1.33)
Twitter	1.19 (.70)	1.55 (.99)	1.45 (1.04)	1.39 (.92)
TikTok	2.11 (1.29)	2.08 (1.32)	3.13 (1.36)	2.39 (1.39)
YouTube	1.92 (1.14)	2.65 (1.24)	2.19 (1.02)	2.25 (1.18)
WhatsApp	1.47 (.81)	1.27 (.64)	2.15 (1.17)	1.59 (.95)
Messenger	1.04 (.26)	1.49 (.88)	1.04 (.26)	1.20 (.60)
Telegram	1.00 (.00)	1.05 (.26)	1.04 (.27)	1.03 (.21)
Snapchat	1.51 (1.03)	1.41 (.92)	2.62 (1.29)	1.79 (1.19)
Pinterest	1.11 (.38)	1.15 (.47)	1.31 (.75)	1.18 (.54)
Reddit	1.10 (.43)	1.18 (.54)	1.27 (.83)	1.18 (.60)
Discord	1.33 (.75)	1.67 (1.09)	1.38 (1.02)	1.47 (.97)

Note: Means (standard deviations).

Lastly, Table 6 focusses on young people's attitudes towards the news, more specifically on how important they find it to follow the news, and how much trust they have in the news. Overall, the participants find it quite important to follow the news and this pattern is similar in each of the three countries. While the trust in news in the overall sample was around the same level as the importance of news, it varied more between the countries, with the Belgian participants reporting the most trust in the news, and the Czech students reporting the least trust in the news.

Table 6.	Attitudes about news			
	Belgium	Czech Republic	Finland	**Total**
Importance of news[7]	2.93 (1.16)	2.94 (1.05)	3.07 (.89)	2.98 (1.05)
Trust in news[8]	3.15 (.97)	2.50 (.58)	3.12 (.48)	2.89 (.79)

Note: Means (standard deviations).

While the survey responses indicate a higher level of importance attached to news, this level of importance seemed to vary much more in the focus groups. During various discussions, participants mentioned that they were quite indifferent and did not really care about the news, and hence attached little importance to it. Other students said that the news was only sometimes, and not always important. During some discussions, the participants said that they did find it important to follow the news, because it is important to know what is happening in the world around them. This can be seen, for example, in the following quotes:

> "It would be pretty good to stay up-to-date on everything happening around us; and a lot of news comes all the time, so it's of course good to be aware of things, if anything extra has happened that we should know about." (Girl, 9th grade, Finland)

[6] News use on social media: "On which of the following social media platforms do you follow the news?" (1) Never – (5) Almost all the time.

[7] Importance of news: "How important is following the news to you?" (1) Not important at all – (5) Very important.

[8] Trust in news: "Please think about journalistic reporting in the news media. Do you believe that the news media (i.e., television news, newspapers, online news sites)…" (1) Completely disagree – (5) Completely agree.

"Pretty important, I think, because then people suppose that you know certain information about what's going on in the world, what is being talked about for a whole day or so. So people suppose you know it and that you can talk about it with them". (Boy, 9th grade, Czech Republic)

M: "How important do you find it to follow the news?"

P1: "I think it's pretty important to keep track of information now in this covid age. So, like, if there was an emergency later on, it's good to know."

P2: "Well, I don't watch it at all because there's so much of it around, so I just don't watch it anymore. I get to know what to do from my parents, but I don't even watch it anymore. I'm not into it."

The survey findings on the levels of trust in news are nuanced by the focus group findings, where trust in news generally seemed to be dependent on the specific news source. Indeed, the general consensus across the focus groups was that not all news sources were reliable, and that only traditional news sources or online sources that are linked to a traditional news source should be trusted. In general, sources linked to public media were the most trusted by the participants in all countries. In Finland, the majority of students said they trust *Yle*, Finland's national public broadcaster, and many also mentioned other legacy media outlets, mostly newspapers, such as *Helsingin Sanomat* and *Aamulehti*. In one group of Finnish eighth graders, the topic of newspapers as credible sources was explored in more detail, and all participants agreed that newspapers are credible sources.

M: "What do you think are the most reliable sources?"

P1: "I think the newspaper is maybe a bit more reliable cause they can't put everything in there." (Girl, 8th grade, Finland)

P2: "Probably a newspaper." (Boy, 8th grade, Finland)

P3: "All these big newspapers in Finland, like Aamulehti, Helsingin Sanomat and the like." (Girl, 8th grade, Finland)

P4: "I also think Aamulehti and the big newspapers and then Yle." (Boy, 8th grade, Finland)

P5: "Yeah pretty much the same, all the newspapers." (Boy, 8th grade, Finland)

P6: "Those newspapers are pretty reliable, yeah." (Boy, 8th grade, Finland)

The trustworthiness of public media and the government's influence on it were discussed more in detail in the Czech Republic.

P: "So the most credible to me is, as girls already mentioned, ČT 24, ČT1 [Czech public TV broadcaster called Czech television]. Czech television because it's a public television and it's funded by the taxpayers' money. They never just make something up. They always invite some expert to speak for them…" (Boy, 9th grade, Czech Republic)

M: "So you mentioned the public media. Why are they credible to you?"

P: "Well some, they would not even dare to write something that isn't true because they would be exposed and they'd lose their reputation." (Girl, 8th grade, Czech Republic)

In the Czech Republic, a few participants also distinguished between news sources that were supported by the government and news sources that were not supported by the government and found the government as an unreliable source:

> M: "Which sources are the most reliable for you?"

> P1: "I have this foreign source... The government declared it to be terrible, untrustworthy, fake. And for me, that's one more reason to trust them. Because the government doesn't want us to know what's going on over there." (Girl, 9th grade, Czech Republic)

> P2: "I would like to add that it is important to know what the newspapers are putting out, because when our Prime Minister owns a third of our media, it is sometimes hard to trust, for example, idnes.cz [Czech news platform]." (Girl, 9th grade, Czech Republic)

4.2 The understanding of algorithm- and data- driven digital media infrastructure among young people

The results of the survey and focus group discussions demonstrated that algorithm- and data-driven social media platforms (Instagram, TikTok, YouTube, Snapchat) and search engine Google are the most popular ways for young people to keep up with the news (see p. 20). Comprehension of the logics and mechanisms that drive those digital media platforms is considered necessary for more critical engagement with online news, and it requires specific skills and understandings from users (Hobbs, 2021, Knaus, 2020; Valtonen et al., 2019). So, during the focus group discussions, study participants were asked about social media tracking practices (*How have the social media tracked you, in your opinion?*) and their data use on these platforms (*Please, tell an example, how service providers use the data which they have collected from you?*). A question was also made related to young people's understanding of social media business models (*Please describe, how your favourite social media platforms make their money?*).

The findings of our focus group discussions revealed that most participants are aware of social media logics to some extent. However, the majority of students' responses were rather operational and technical than critical, and based on their daily experiences in the digital world and their own observations. Young people generally understand that social media and Google make money from advertising, and that tracking on platforms is a practice linked to it. When participants were asked specifically about tracking or data use on social media, they were speaking mostly about how these platforms listen (hear, notice) to what they are talking about and follow their searches on the internet, and then display relevant advertisements based on that information:

> "It's almost absurd, I was searching for a computer and I visited an online shop and suddenly I had computer ads everywhere, so they're definitely tracking me." (Boy, 9th grade, Czech Republic)

> "My brother once did this with a friend's phone, he said "dog food" out loud a lot of times to the phone and then all of a sudden he got advertisements for dog food." (Girl, 9th grade, Belgium)

It should be noted that when tracking was brought to the discussion table, datafication or commercial aspects of social media were also discussed. Many participants, particularly 8th graders, provided very short answers, as evidenced by the following quotes:

> "[...] if I have talked about something, there comes an ad about it immediately." (Boy, 8th grade, Finland)

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Only a few participants gave more in-depth explanations, demonstrating a higher level of critical understanding. Few students, for example, highlighted the importance of algorithms:

> "[...] when I have the Snapchat map on, my location shows for quite many people. In general, if you search for something, you get ads immediately, as that is how the Internet works, the algorithms I mean. Same with Facebook, it listens to you in secret as well." (Girl, 9th grade, Finland)

> "Advertisements are actually bought by robots, well, not robots, but these algorithms, and these algorithms are improving themselves to become better" (Girl, 7th grade, Belgium)

Yet another student recognised the connection between the ads displayed to him on Twitter and possible tracking on the device he was using:

> "[...] I get ads that are related to what I have recently looked at, all that sort of stuff. Well usually for example if I go on, let's say Twitter, and then I have played some video game and I've done it on the same device, like a computer, then it shows ads and all kinds of things that are related to the video game." (Boy, 8th grade, Finland)

Some of participants discussed how their Google searches are related to Google's advertising strategies:

> "If you write a restaurant's name on Google Maps, it offers you all sorts of things… If we google something, it is all saved and can be taken advantage of. They can advertise products to us, that is Google's point." (Girls, 9th grade, Finland)

There were students who have noticed that social media's recommendations can be inaccurate:

> "[...] if you click on something by accident, it [social media] will think you like it and it will keep offering it to you. For example I clicked on one girl on Instagram by accident, she took a picture of her braces – what colour they are. And since then all I get to see are braces (laughter)... But it doesn't interest me." (Girl, 9th grade, Czech Republic)

Only a small number of participants pointed on the link between tracking them and content recommendations (other than advertisements) on digital media platforms:

> "In both TikTok and Instagram "for you" page, I notice that clearly there is like a clear route that they see you have those interests, and they don't put random stuff there." (Girl, 9th grade, Finland)
> "They might take advantage of them for what posts they recommend to you. Like if you like cooking or something, then of course they don't show you car repair posts." (Boy, 8th grade, Finland)

Some participant mentioned recommendations directing to "fake news or hoaxes":

> "Most of the time it recommends you things. So if you look for example at some website with fake news or hoaxes then other ones will be recommended to you, so that's bad…" (Boy, 8th grade, Czech Republic)

Despite the fact that the topics discussed in focus groups mostly dealt with news consumption, most students failed to mention the impact of tracking and datafication on the news. Only a few students mentioned that social media or Google tailor and recommend news based on their data / personal information or behaviour online. As, for example, in the case of this student, who even related news exposure to social media's practices of attention engineering based on how long users spend on specific content:

> "Social networks work on the principle that they want us to spend as much time there as possible and go through as many posts as possible. They give us quick news and what we're interested in from that group or genre and then they just see how long we spend there if we like it or save it and forward it to someone." (Girl, 9th grade, Czech Republic)

A student from Finland even claimed that Google recommends news based on what she was talking about offline:

> "I get news related to the topic on the Google's front page, when I have talked out loud about that topic." (Girl, 9th grade, Finland)

Another ninth grader girl from Finland expressed the opinion that the data collected by social media helps platforms *"to direct news better"* .

Data analysis revealed that 9th graders were able to explain tracking, datafication, and commercialisation slightly better than 8th graders. Few students have mentioned being taught about the logics of algorithm-driven digital media platforms in school. It can be illustrated by this example:

> "They (platforms) collect that information, and I remember that sometimes last year we watched some video about that topic in school." (Girl, 9th grade, Finland)

However, a thorough examination of the data revealed that, while these topics are occasionally discussed at school, formal education does not provide a systematic approach to teaching about them. Responses given by students to all questions ranged from "I don't know" or "I don't understand the question" to quite sophisticated explanations provided by a few students, demonstrating varying levels of comprehension. Meanwhile, some of the responses revealed scepticism, if not outright cynicism, toward the topics discussed, indicating a lack of knowledge of both tracking and datafication:

> "I don't think there's any interesting information about me that they (platforms) would like to want." (Girl, 8th grade, Finland)

> "I don't care if they do (track me). Well, I don't know what they do with the information about what I have watched on YouTube etc. I don't know." (Boy, 8th grade, Finland)

> "Conspiracy theory. "Social media tracks you… No one tracks me." (Boy, 8th grade, Finland)

To summarise, the focus group discussions revealed that young people are starting to gain an understanding of some aspects of current digital media infrastructures. They are familiarising themselves with tracking, datafication, and commercialisation practices through a "learning by doing" method based on their daily experiences on social media and search platforms. As a result, their digital skills appear to be more functional than critical in this area, and they are insufficient for critical news consumption in today's complex digital media environment. Having spent much time online, teenagers are able to recognize the obvious connection between their "digital footprints" and the

advertisements displayed to them. Meanwhile, they have a vague understanding of algorithmic curation, recommendation, and personalisation for non-advertising content, particularly news.

4.3 Young people's credibility evaluation skills and strategies, and the role of digital skills

4.3.1 Digital skills and news literacy

To gain more insight into young people's credibility evaluation skills and strategies and the role of digital skills, we first measured the participants' self-reported digital skills and news literacy levels.

The digital skills scores – both overall skills and separate skill types – in this study represent the proportion of skills at a high level. High digital skills levels were calculated by counting the number of items for which the respondent indicated the highest skill level (answer option 5, "very true of me"). This number was divided by the number of items that were answered by the respondent – 25 for overall skills and six for each separate skill type. This resulted in a final score between 0 and 1, with 0 indicating no scores of 5 and hence no skills at a high level and 1 indicating all scores of 5 and hence all skills at a high level.

News literacy was measured using a selection of six items from the News Literacy Scale by Ashley, Maksl, and Craft (2013). This selection was made to limit the number of items and the time it would take the participants to complete the questions, and was based on an analysis of the scale used in a previous study with a different sample of young people. Principal components analysis using direct oblimin rotation revealed that one component was extracted and that 54.03% of the variance was explained. Reliability analysis showed that together the six items were a reliable measure of news literacy (Cronbach's alpha = .83). The variable for news literacy was created by calculating the mean score across the six items.

The digital skills and news literacy scores are summarised in Table 7: 44% of the participants across the entire sample indicated a high level of digital skills in general. On average, the participants had the most confidence in their communication and interaction skills. This was followed by technical and operational skills. Content creation and production skills and information navigation and processing skills were rated much lower, with in both cases 35% of participants reporting a high score on the skill dimension. Programming skills were rated the lowest, on average only 4% of participants indicated a high score. The participants seemed more confident in their news literacy, which averaged 5.21 (on a seven-point scale) across the entire sample.

During the focus groups some participants displayed a good understanding of the production context and potential effects of news, and hence seemed to have a high level of news literacy:

> "For example, this article is framed in a news format: it has headlines and subtitles, and the picture and publishing date are written in a pretty news-type manner in this particular article. But then the other one on Twitter might have been published on a whim." (Girl, 9th grade, Finland)

> "For example, I could post fake news to Instagram. I can post it myself [...]. But then it only passes through me and nobody else will know about it. And on VRT news [The Flemish public broadcaster] I don't think fake news will be easily posted because it should pass through several people. Someone has to do the pictures, someone else the article, the person who decides that the article is good, all that has to be decided by different people. And I think that this will make sure that there is less fake news published." (Girl, 7th grade, Belgium)

Table 7.	Digital skills[9] and news literacy[10]			
	Belgium	Czech Republic	Finland	**Total**
T&O	.45 (.32)	.56 (.30)	.60 (.28)	.53 (.31)
P	.06 (.24)	.05 (.22)	.01 (.12)	.04 (.20)
IN&P	.30 (.30)	.32 (.29)	.44 (.33)	.35 (.31)
C&I	.47 (.29)	.56 (.30)	.71 (.24)	.57 (.29)
CC&P	.32 (.31)	.28 (.29)	.47 (.34)	.35 (.32)
Overall digital skills	.38 (.24)	.42 (.24)	.53 (.24)	.44 (.25)
News literacy	4.83 (1.06)	5.35 (.82)	5.53 (.60)	5.21 (.91)

Note: Mean of the proportions of skills at a high level (standard deviations). T&O: technical and operational skills; P: programming skills; IN&P: information navigation and processing skills; C&I: communication and interaction skills; CC&P: content creation and production skills.

4.3.2   Credibility evaluation performance

During the news exposure phase of the study, the participants were shown twelve news messages of which six were true and based on real news stories, and six were false and fabricated by the researchers. For each news message, the participants' perceived credibility of the messages was measured using the Message Credibility Scale (Appelman & Sundar, 2016), on which they had to indicate how well the words "accurate", "authentic", and "believable" described the news message they just saw on a seven-point scale, ranging from (1) Describes very poorly to (7) Describes very well. For each news message, the final credibility score reflects the mean score across these three items measuring message credibility.

Due to the technical issues in the Finnish data collection outlined on p.12, the quality of the credibility evaluation data from the Finnish participants was compromised and the number of participants with valid and reliable responses was too low. Therefore, this section only contains quantitative data from the participants in Belgium and the Czech Republic so as to allow valid country comparisons.

Due to the inclusion of the answer option "I don't know", which several participants chose due to not knowing the answer, due to not always understanding the meaning of the terms "accurate", "authentic", or "believable", or due to survey fatigue, the number of missing responses on these two aggregate variables for credibility evaluations is quite high. As a result, participants who indicated this answer option in response to at least one of the items presented, are classified as missing across the entire credibility evaluation measurement. Only 61 participants out of a total of 181 (33.7%) reported valid responses for their credibility evaluations of false news. This number was even lower when it came to credibility evaluations of true news articles, with 44 participants out of 181 (24.3%) reporting a valid response across the three separate items.

Figure 1 presents the Belgian and Czech participants' average credibility evaluations of news messages that were false and fabricated by the research team. On average, the participants rated the six false news messages with a score of 3.16 on a seven-point scale, indicating that on average, these messages were overall seen as not credible. Of the valid responses, 65.6% estimated these news

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[9] Digital skills: "Please indicate how true the following statements are of you when thinking about how you use the internet and technologies such as mobile phones or computers." (1) Not at all true of me – (5) Very true of me.

[10] News literacy: "The next questions are about the news media. How would you agree or disagree with the following statements?" (1) Completely disagree – (7) Completely agree.

messages to be not credible. Almost two thirds of the participants with valid responses hence evaluated the false news messages correctly as mis- and disinformation. 24.6% indicated a score that rounded up or down to the centre of the scale, indicating they found these messages neither credible nor incredible. Only 9.8% of the participants with valid responses evaluated the false news messages as credible.

Figure 1.	Credibility evaluations of false news messages

Credibility evaluation of false articles
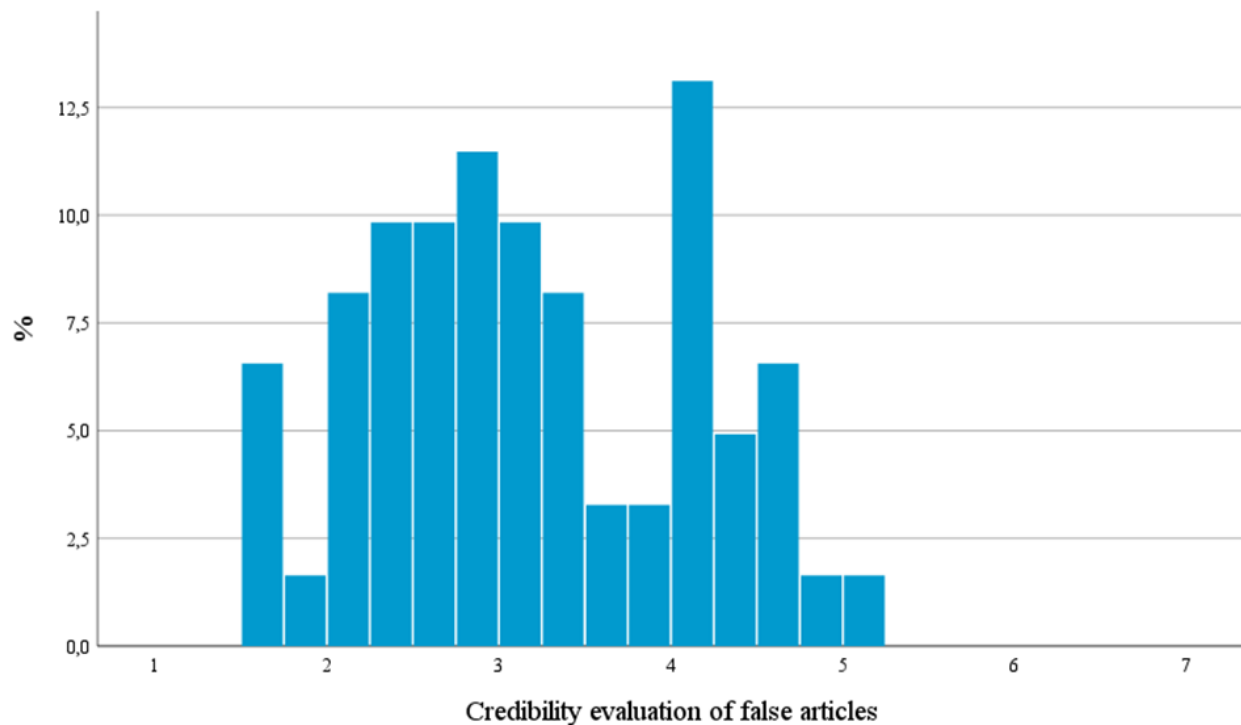
Figure 2 compares the average credibility evaluations of false news messages between Belgian and Czech participants. On average, the Czech participants (M = 2.92, SD = .91) rated the false news messages as significantly less credible than the Belgian participants did (M = 3.43, SD = .83; t = 2.26, p < .05). 78.1% of participants with valid responses in the Czech Republic evaluated the false news messages as not credible. In Belgium, this was only 51.7%. Additionally, only 12.5% of Czech participants report a score revolving around 4, the centre of the scale, thus rating the news messages as neither credible nor incredible. The average Belgian credibility evaluations of false news messages more often approached the centre of the scale, with 37.9% of participants with valid responses who found these news messages not necessarily credible nor incredible. The number of participants evaluating the false news messages incorrectly was almost equal in both countries, with 9.4% of Czech participants and 10.3% of Belgian participants estimating these news messages to be credible.

Figure 2.   Credibility evaluations of false news messages - Country comparison

Figure 3 presents the participants' average credibility evaluations of news messages that were true and based on real news stories. On average, the participants rated the six true news messages with a score of 4.62 on a seven-point scale, which indicates that these messages were overall seen as rather credible. It is interesting to note, however, that this average credibility evaluation is rather close to the centre of the scale, suggesting at least some degree of uncertainty among the participants regarding the credibility of the news message. Overall, 54.5% of the participants indicated that the true news messages were credible. It is interesting that, while almost two thirds of participants estimated the false news articles correctly, only slightly more than half of the participants estimated the credibility of the true news articles correctly; 38.6% of the participants report a score revolving around the centre of the scale, indicating that more than a third of them did not find these articles credible nor incredible. It is again interesting to compare with the credibility evaluations of false articles, where only a quarter of the participants approached the centre of the scale and rated the news messages neither credible nor incredible. Finally, 6.8% of the participants with a valid response were very critical and evaluated even the true news messages as incredible.

Figure 3. Credibility evaluations of true news messages

Credibility evaluation of true articles
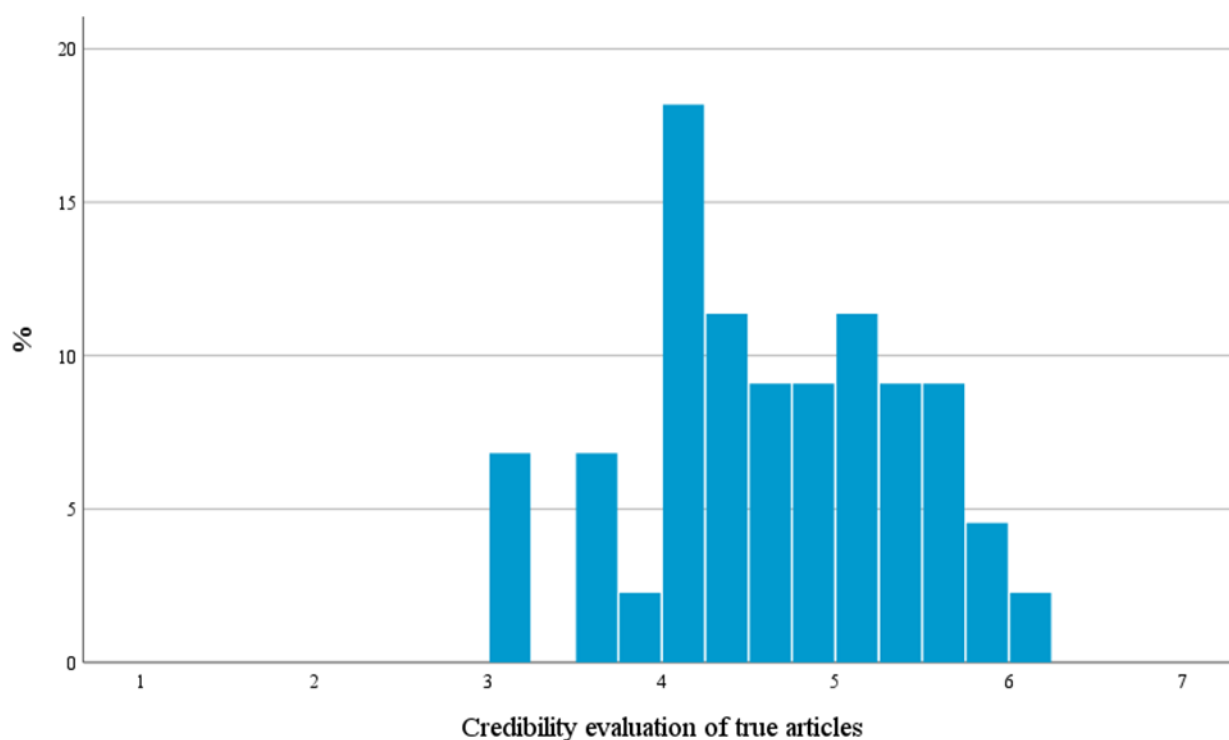
Figure 4 contains a comparison between the Belgian and Czech participants regarding their credibility evaluations of true news messages. While the average credibility evaluations of false articles differed significantly between the two countries, this was not the case in relation to true news articles (t = -.51, p = .31). Both the Czech participants (M = 4.67, SD = .78) as well as the Belgian participants (M = 4.55, SD = .79) on average estimated the true news messages to be credible, albeit rather close to the neutral centre of the seven-point scale. One in two or 52% of the Czech participants evaluated the credibility of the true news messages correctly. This number was only slightly higher in Belgium, with 57.9% of participants reporting that the true news messages were credible. Among the Czech participants, 44% had an average credibility evaluation score that approached the centre of the scale. In Belgium, 31.6% of the participants scored around 4 on the scale and hence indicated that they found the true news messages neither credible nor incredible. Among the Czech participants, 4% estimated the credibility of the true news messages incorrectly. This number was slightly higher in Belgium, with 10.5% of participants rating the true news messages as not credible.

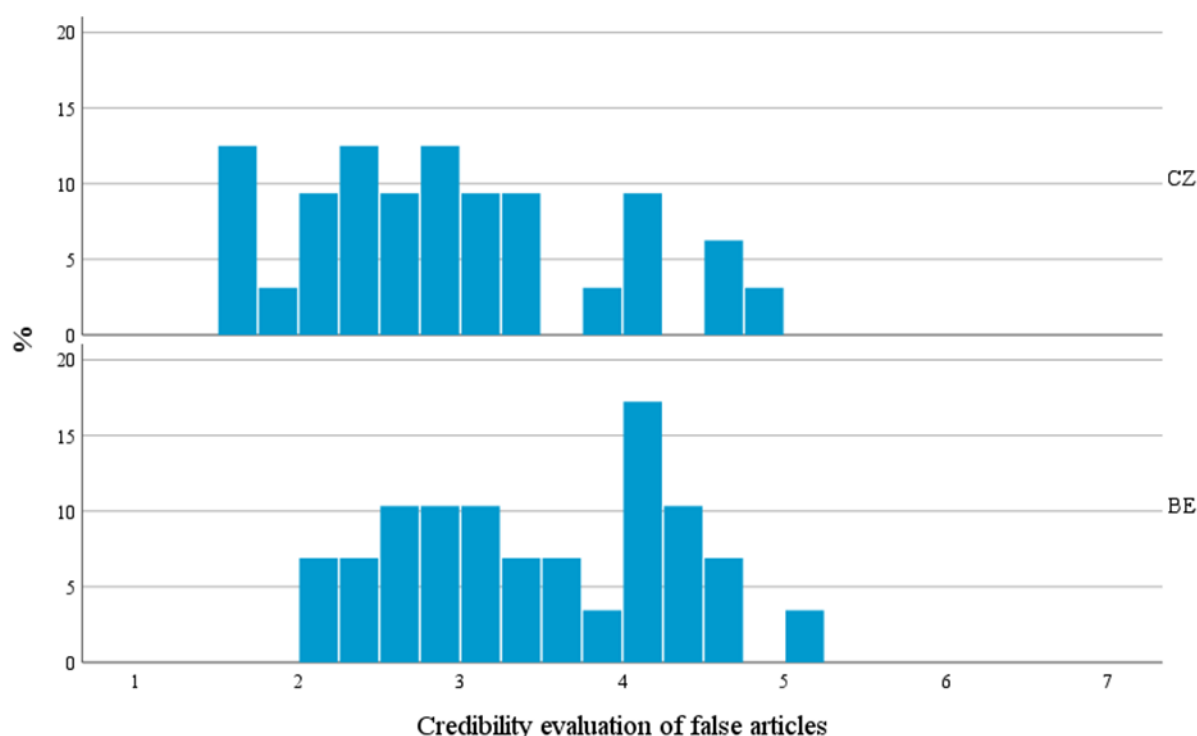**Figure 4.** **Credibility evaluations of true news messages - Country comparison**

Credibility evaluation of true articles
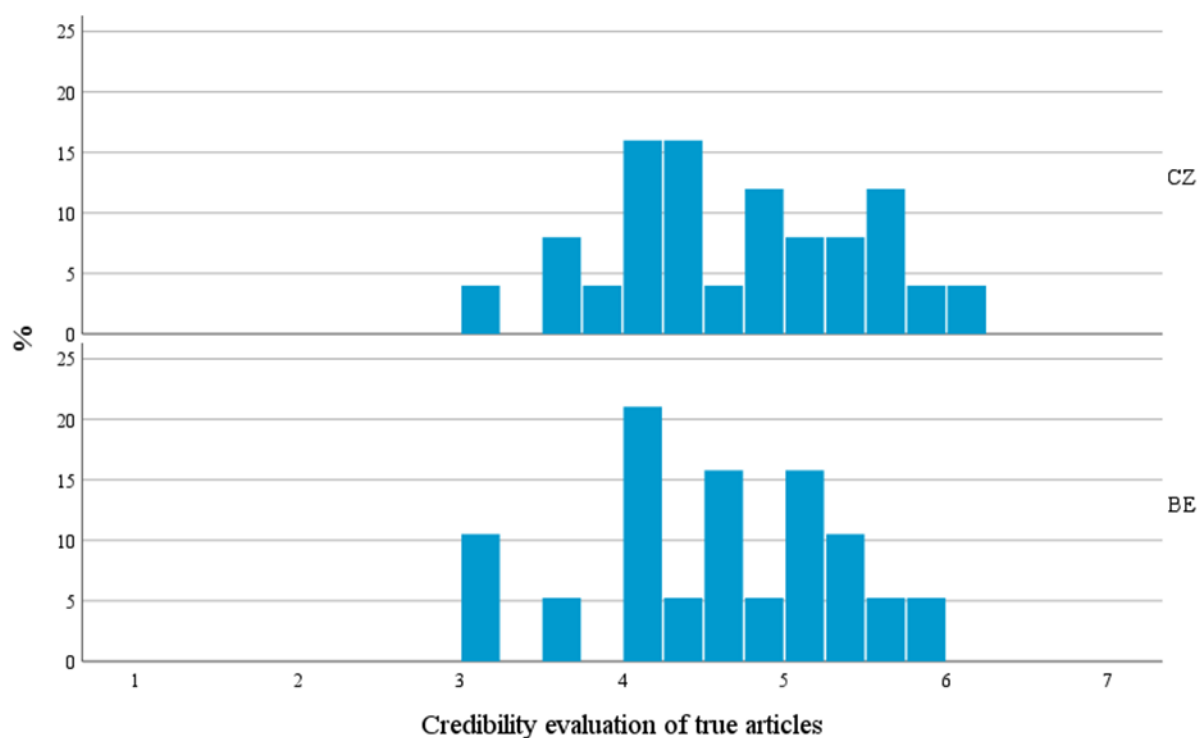
The focus groups allowed us to gain more insight into the participants' experiences during the credibility evaluation performance test. Overall, they reported different experiences regarding the difficulty of the tasks. The majority of participants said they sometimes had difficulties estimating whether a news message was correct while smaller numbers said they had no significant difficulties or found the tasks rather difficult.

> M: "Did you find it difficult to say how credible you found the news messages?"

> Several Ps simultaneously: "Yes."

> P1: "Yes, because if I don't follow the news, I don't know what these messages should otherwise look like." (Girl, 9th grade, Belgium)

> P2: "I had that too." (Girl, 9th grade, Belgium)

> P1: "Then I don't know what I should base my judgement on."

4.3.3 Credibility evaluation strategies

To gain insight into young people's credibility evaluation styles, we asked them about the degree of analysis vs. intuitive thinking they employed when evaluating the credibility of online news (Table 8). The findings show that on average, the participants said that they used more systematic strategies when they evaluate the credibility of news than they resorted to heuristic evaluation styles.

These findings were also reflected in the focus groups. The participants regularly admitted they followed their intuition when tasked with evaluating the credibility of the news messages that were presented to them:

"I didn't necessarily find it difficult, yeah… I just followed my first impression, just how it looked or something, but I don't know if that's correct". (Girl, 9th grade, Belgium)

Even though some participants said they followed their intuition when judging the credibility of the news messages, thoughtful, analytic evaluation techniques emerged much more from the discussions. The techniques that the participants used to evaluate the credibility of a news message will be outlined in the next section of the findings.

Table 8.	Credibility evaluation styles[11]			
	Belgium	Czech Republic	Finland	Total
Analytic style	3.08 (.85)	3.63 (.57)	3.29 (.87)	3.35 (.79)
Intuitive style	2.90 (.85)	2.95 (.68)	3.15 (.73)	2.98 (.76)

Note: Means (standard deviations).

To gain a better insight into the ways in which the participants evaluated the credibility of the news messages, we asked them how they arrived at their credibility judgement and which elements of the news message they paid attention to. During the first and second exposure moments, this was an open question with a text field in which the participants could type their answers, in order to avoid priming them with pre-defined answer options. During the third and fourth exposure moments, to avoid the participants getting tired of answering an open question, we provided them with a multiple-choice question containing the most-common elements. The credibility evaluation strategies were also further discussed during the focus groups. From these combined findings, five main credibility cues emerged that served as valuable information for the participants when evaluating the credibility of the news messages that were presented to them during the news exposure phase: (1) news source, (2) content, (3) language and spelling, (4) audiovisual materials, and (5) social media elements. In what follows, we will elaborate on these five credibility cues.

Table 9 contains an overview of the extent to which the participants in this study paid attention to the following elements of the news messages to make their credibility judgments. Similar to the focus groups, the source of the news emerged as the most informative element when judging the credibility of a news message, followed by language and spelling.

Table 9.	Elements informing credibility evaluation[12]		
	Belgium	Czech Republic	Total
News source	2.88 (.86)	2.71 (.73)	2.80 (.80)
Title of article	2.21 (.74)	2.35 (.65)	2.29 (.70)
Pictures and videos	2.21 (.79)	2.08 (.65)	2.15 (.73)
Layout and design	2.23 (.79)	2.52 (.76)	2.37 (.79)
References to sources of information	2.15 (.89)	2.22 (.78)	2.19 (.83)
Language and spelling	2.44 (.1.06)	2.86 (.86)	2.65 (.98)
Likes, comments, and/or shares	1.81 (.78)	2.33 (.93)	2.05 (.89)

Note: Means (standard deviations).

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[11] Credibility evaluation style: "Below are some statements about ways in which people can evaluate the credibility of news. Reply thinking about how true this is of you." (1) Not at all true of me – (5) Very true of me.
[12] News elements: "Have the following elements contributed to your credibility evaluation of the news you just saw?" (1) Not at all – (5) A lot.

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In line with the previous focus group findings relating to the reliability of news sources, the news source and the reliability of this source emerged as one of the most significant credibility cues for the participants regarding the news messages that were presented to them during the news exposure phase. In general, the news messages that were shared by news sources that the participants recognized and knew, were perceived as more credible and with less scepticism than the news messages that were published by the made-up news source "News24/7" or individual social media user profiles:

> "Well, this here, it doesn't at least look like it's, like, true. Cause I've never heard of this News24/7. There's no real substance except for one sentence." (Boy, 9th grade, Finland)

In line with their general perceptions of news source reliability, news messages that were shared by the public broadcaster were generally seen as the most reliable and were consequently doubted the least in terms of their credibility.

> P: "But this message [a news message by News24/7 about a case of cyberbullying] says "teasing", while this one [a news message by the public broadcaster about the same case of cyberbullying] says "bullying". (Boy, 9th grade, Belgium)
>
> M: "Yes, so is that something…"
>
> P: "Yes. I think I then trust this one [the public broadcaster news] more than that one [the News24/7 news], because that is VRT [the Flemish public broadcaster], so, yeah".

A finding that nuances this perceived importance of the news source, however, is the platform on which the news message is shared. As the discussion of findings relating to specific platforms already indicated, social media are, despite their popularity as a news channel, perceived as the least reliable by a large majority of the participants. For some participants, this pattern was replicated when discussing their credibility evaluation strategies during the news exposure phase, as these news messages were at times scrutinised with more scepticism than news messages on news broadcasters' own platforms or websites were. This can be illustrated, for example, by a discussion among the Belgian participants related to Facebook:

> P1: "Also the platform. Because here on Facebook, it would be a lot less reliable than it would be if it were on the VRT NWS [the Flemish public broadcaster] website or app". (Boy, 14, Belgium)
>
> P2: "This is a post by HLN [a Flemish commercial newspaper]". (Boy, 9th grade, Belgium)
>
> M: "Yes, so how is this then for you? When it is shared on Facebook, but it is a post by a source that you know?"
>
> P3: That can be fake as well, a fake page or something. They can imitate that". (Boy, 9th grade, Belgium)

There was a similar debate in Finland concerning the truthfulness of information posted on Twitter:

> M: "How true would you consider this to be and on what grounds?"
>
> P1: "…I think the problem is that it's on Twitter, where you can't trust everything much because there are rumours. But I agree with the post myself." (Girl, 9th grade, Finland)

P2: "…I could trust this maybe more if they had linked the research and I could go look at it myself. And that username isn't very credible. If this was posted by some news company, I could maybe trust it a little more." (Girl, 9th grade, Finland)

Additionally, various participants expressed the importance of cross-checking news messages between different news sources that they could trust, as they thought that when different trusted news sources wrote about the same event, the news message had to be reliable:

P: "You could also have a look if the article is to be found on other websites". (Girl, 8th grade, Czech Republic)

M: [...] "How would you proceed? If you were really interested in it and wanted to verify it."

P: "Well, I would just type either the title or some keywords in a search engine." (Girl, 8th grade, Czech Republic)

Google and Wikipedia were among the places where young people told us they cross-check information:

P: "Well, if you can somehow prove that it's false, for example when someone says something on Twitter and you look it up on Google or Wikipedia, which is a relatively reliable information source as far as I know, and the information is different, the person is probably wrong." (Boy, 8th grade, Finland)

Second, for their credibility evaluations, the participants paid attention to the content of the news message. A regularly recurring theme was whether the events that were described in the news messages were realistic and could happen in real life. Indeed, various participants based their first evaluation of the news messages on common sense, logical thinking, and intuition regarding how realistic the described event was.

M: "When you saw these news messages and you had to answer the question of whether you found it credible and how you determined this, did you find that easy?"

P1: I found that quite easy." (Boy, 7th grade, Belgium)

M: "Mhm, and why?"

P1: "Because sometimes… You can just look at the title for example. I think there was this message that said that gay people are more immune to the coronavirus. I thought… Yes I could see immediately that that was fake."

From the focus group discussions and open-ended questions, it became clear that the participants compared the information that was in the articles to their knowledge about the world. For instance, a false news message about "LGBT-free zones" being installed in a large city in the country prompted participants to think about the legal aspects of such zones. Such measures were deemed "unconstitutional", and quickly the news message was correctly categorised as false.

Two additional elements relating to the content of the news messages should be highlighted. First, the amount of information that is given in an article or news post was seen as important information relating to the credibility of the message. When the person or news source sharing the news message

provided more details instead of describing the event on a more superficial level, the participants would rather think the news message was credible. Second, the participants seemed to attach importance to references to other sources of information. For instance, one news message referred to the findings of a scientific study. The participants attached importance to this study as a cue signalling the credibility of the information presented in the news message. Some students even raised concerns about the lack of specific details of the study:

> P: "I could say, based on my own experience, that it seems truthful. And it says there that "according to research", even though it doesn't say which research. In any case, some research has apparently been conducted. It doesn't say where the news comes from…" (Girl, 9th grade, Finland)

While the participants' experiences relating to the importance of the content of the message and the news source were rather straightforward and comparable across focus groups, their opinions concerning the role of language and spelling, audio-visual materials, and social media elements were more varied and nuanced, and seemed to not always apply to each news message that was presented to them. Concerning language and spelling, the participants attached some importance to the correctness of the language used in the news message. Yet, they admitted they did not always pay attention to this or did not notice it when words or phrases contained an error. Other participants would sometimes notice errors while acknowledging that anyone can make a typo and that this doesn't necessarily imply that the author of the message is unreliable.

> P1: "It should be good Dutch. When I see abbreviations, then you immediately know that it isn't right. But I don't pay much attention to spelling mistakes" (Girl, 9th grade, Belgium)

> P2: "That could happen to anyone." (Girl, 9th grade, Belgium)

Next to correct language, the undertone of the news message, i.e., neutral and not biased, is another element that could aid in credibility evaluations. However, when asked about elements that helped them decide whether the message was credible or not, the undertone of the message was not often mentioned by the participants. Yet, when asked afterwards about whether this was important to them, the participants showed that they were aware of this and had some knowledge about it:

> P: "When you see opinions in it when it is not an opinion piece, then that is not okay. When there really is an opinion in it, then I say it is not reliable" (Girl, 9th grade, Belgium)

In line with neutral language, from several focus groups emerged that sensational headlines and clickbait served as an indicator of less reliable news, as such headlines seemed to try to catch users' attention rather than informing them:

> M: "Which factors helped you understand whether the information was true or false?"

> P: "That it has that clickbait headline and that picture." (Boy, 9th grade, Finland)

> M: "What is a clickbait headline like?"

> P: "Like one that makes you want to know more about it." (Boy, 9th grade, Finland)

> M: "Does it make the article less convincing?"

P: "Well not exactly, but it might, or it does a little. It's not so much meant to convey the information but to make money off it. Like those articles get more views and so on."(Boy, 9th grade, Finland)

Regarding audiovisual materials such as pictures and videos, three elements should be highlighted. First, as young people mostly rely on social media for their updates about the news, and as platforms such as TikTok and Instagram are highly visual, the importance of images and videos in online news reporting should not be underestimated. Indeed, some participants expressed that due to the fast-paced nature of social media news use, images and videos are often the first, and sometimes only, information that they get about the news. This also seems to be the case in relation to one Instagram post on online hate against climate activists to the participants. This quote highlights the importance of the choice of audiovisual materials when sharing a news story. While the story described online hate against a young climate activist, this participant only quickly looked at the message as she would on her regular Instagram newsfeed, and therefore was unable to catch the entire story:

P: "I mostly look at the pictures because on Instagram I'm mostly scrolling. I don't read everything. I see that people are talking about climate change and then I scroll further." (Girl, 7th grade, Belgium)

Another element that surfaced in several focus group discussions was the fit between the pictures and the news story that was being told. Various participants expressed that some of the news messages we presented to them contained images that were "from Google" or that were "stock photos" and were therefore not necessarily applicable to the specific event that was being reported on in the news message. This was mentioned several times in relation to a news message on a case of cyberbullying, where the news message was accompanied by a black and white stock photo of a teenage girl crying. However, these participants also quickly acknowledged that it is not always feasible or possible to share images of the specific event or people that were involved:

"And this picture, if it is really that woman, I don't think that you can do that with privacy and such. You must then first get permission or something and I don't think she would give permission because she is being bullied." (Boy, 9th grade, Belgium)

The last element in relation to audio-visual materials was the quality of the pictures. Some participants argued that blurry pictures or videos could imply that these were taken by an amateur rather than a professional journalist or press photographer, and that this could also serve as an indication of the quality and credibility of the news message itself. However, some other participants nuanced this idea by mentioning the role of amateur images, for example in instances of breaking news. In relation to this and similar to the language used in a news article, the participants agreed that pictures should be informative and neutral and should not contain sensationalism or clickbait text on them, in response to one of the news message that we presented:

"I think that reliable news would be more neutral, and choose less striking pictures" (Boy, 9th grade, Belgium)

Lastly, as we also presented news posts on social media to mimic the participants' real news use practices, the importance of unique social media elements for the participants' credibility evaluations of the news messages was also discussed in the focus groups. These elements include typical social media metrics such as the numbers of followers, likes, shares, and comments. For some participants, these metrics served as rather important credibility cues, and these were mostly combined with logical thinking and common sense. For instance, one news message we presented to them concerned a tweet

that was shared "yesterday" and only had 16 likes and 1 retweet. For various participants, these low engagement numbers indicated that the Twitter profile was potentially not a reliable source and urged them to be more cautious about the tweets shared by this profile:

> P: "Well, I would say that this is from Twitter and it has so few likes, it is a scam." (Boy, 8th grade, Finland)

Other participants, however, did not pay that much attention to these social media metrics:

> P1: "It doesn't necessarily matter how many followers they have, because some conspiracy theory accounts have many followers as well but that doesn't mean I will believe it." (Girl, 9th grade, Belgium)
> P2: "And you can also buy followers." (Girl, 9th grade, Belgium)

Next to metrics such as the number of comments, the participants also attached importance to the content of these comments.

Lastly, many participants paid attention to the presence of a "blue check" behind a profile's user name on social media. For many of them, this blue check served as a quick indication of reliable and truthful information. Indeed, the real meaning of the blue check on social media seemed to be widely misunderstood by the participants. While they generally interpreted it as an indicator of correct information, the blue check means that the profile posting the information is authentic and who they say they are. However, this does not prevent them from sharing incorrect information.

> "Most often there is a blue check behind the name when it is real. And then I trust it." (Girl, 9th grade, Belgium)

4. 3. 4 Hypothetical bystander reactions

We selected two stimuli to discuss more in depth with the participants during the focus groups. These were the stimuli that we asked additional questions about regarding hypothetical reactions during the news exposure phase. The first news message was a story about two students being expelled from school after they were found to be cyberbullying a classmate because of her weight. We have chosen this stimulus to ask about participants' bystander reactions more in depth. When asked how they would have reacted if they witnessed such a situation, they usually responded that they would seek help. Mostly, they would turn to adults for help (their parents, victims' parents, or someone working at the school).

> M: "If you witnessed something like this yourself, how would you react and why?"

> P1: "I would definitely take the side of the girl who was actually attacked. And maybe I would try to help her in some way, like go talk to an adult or at least try to support her, just so she doesn't give up." (Girl, 9th grade, Czech Republic)

> P2: "I definitely would too, because when someone insults you like that it must be awful, and that person doesn't want to do anything about it because they don't want to stir it up any further, so I would definitely try to support her and reassure her that she's not alone."
> (Girl, 9th grade, Czech Republic)

They would also try and support the victim. (For some of the participants this kind of involvement was dependent on the proximity of their relationship with the person being bullied.)

> P3: "I would try to help the person."
>
> M: "How?"
>
> P3: "I would stand up for him and try to solve it with the help of an adult." (Boy, 8th grade, Czech Republic)
>
> P4: "... If I knew her [the girl who was being cyberbullied] in person then I might even stand up for her but if it was some random person on the internet then it's pointless for me." (Boy, 8th grade, Czech Republic)

The second news message that was selected for a more in-depth discussion relating to hypothetical bystander reactions concerned an article about a study revealing that a large number of girls hide the fact that they are girls in online games in order to avoid harassment by other (male) players. The participants were asked how they would react when they saw a girl being harassed in an online game. The hypothetical reactions of the participants in relation to this event of online harassment were rather different from their reactions to the case of cyberbullying in the previous news message. Whereas the participants would provide support for the victim and seek help, this would not always be the case in an online game.

> "…it's not against me if someone wants to hide their gender in games and so on and of course I wouldn't do anything about it because I can't really influence it in any way." (Boy, 8th grade, Finland)

One factor that the participants seemed to take into account as a determinant of whether they would take action against the behaviour, was the degree to which they knew the person. While a person being cyberbullied on their news feeds was often someone they knew, a person being harassed in an online game was most often a stranger:

> "I think, I don't know whether I would… I don't know. I'm not sure that I would do that directly to… Because I probably don't know both of them, so I don't know if I would do something." (Girl, 9th grade, Belgium)
>
> "If there are some harassing comments or something like that, then I would probably say something about it, and if, for example, my friend was bullied somewhere online, then I would also intervene." (Girl, 9th grade, Finland)

4.3.4 *The role of digital skills and news literacy in young people's credibility evaluation performance*

Table 10 displays the correlations between the participants' digital skills, news literacy, and their overall credibility evaluations. Based on this table, we can conclude that for this small sample of young people in this study, both digital skills and news literacy are not significantly correlated with their credibility evaluations. Having better skills in either of the five domains that were specified in this study is not significantly linked to rating false news articles not credible or true articles more credible. Similarly, possessing news literacy - knowledge and skills relating to news production, consumption, and effects, was not linked to better credibility evaluation performances in this sample of young people.

Table 10.	Correlations between digital skills, news literacy and credibility evaluations							
	1.	2.	3.	4.	5.	6.	7.	8.
1. Credibility (F)	1							
2. Credibility (T)	.24	1						
3. T&O	-.17	.00	1					
4. P	-.11	-.22	.25**	1				
5. IN&P	-.14	.01	.59***	.27***	1			
6. C&I	-.12	.09	.53***	.15	.54***	1		
7. CC&P	-.10	-.09	.59***	.27***	.65***	.61***	1	
8. News literacy	-.12	.25	.31***	-.04	.17	.20*	.17	1

Note: Pearson correlations. *p < .05, **p < .01, ***p < .001. F = credibility evaluations of false articles, T = credibility evaluations of true articles. Only calculated for BE and CZ participants. N for correlations including credibility evaluations (1 and 2) is lower than for the remaining correlations due to missing values on these variables.

Table 11 presents the correlations between socio-demographic variables, internet, social media, and news use variables, and the participants' overall credibility evaluation performance. While we found some correlations between sociodemographic variables and use variables, these variables were not significantly linked to young people's credibility evaluation performance in this sample. This indicates that personal characteristics such as age or socio-economic status, as well as the extent to which young people in this sample use the internet, social media, and news, are not linked to their ability to rate false news articles as less credible or true articles as more credible.

Table 11.	Correlations between socio-demographics and credibility evaluation performance							
	1.	2.	3.	4.	5.	6.	7.	8.
1. Credibility (F)	1							
2. Credibility (T)	.24	1						
3. Age	-.20	.21	1					
4. Gender	.11	-.22	-.11	1				
5. SES	.07	.21	.05	-.08	1			
6. INT	-.05	-.24	-.29***	-.01	-.02	1		
7. SNS	-.11	-.15	.08	.08	-.18*	.20*	1	
8. News	-.05	-.03	-.10	.08	-.12	-.24**	-.06	1

Note: Pearson correlations. *p < .05, **p < .01, ***p < .001. F = credibility evaluations of false articles, T = credibility evaluations of true articles Only calculated for BE and CZ participants. N for correlations including credibility evaluations (1 and 2) is lower than for the remaining correlations due to missing values on these variables.

5 Conclusions and recommendations

As mis- and disinformation on the internet and on social media are posing various threats to individuals and societies, it has become increasingly important to arm users, and especially young people, with the necessary digital skills to protect themselves against any potential negative outcomes of their exposure to online mis- and disinformation. With various studies in the literature focusing on digital skills in relation to online risks such as cyberbullying and exposure to potentially harmful contents, this research seeks to add to the literature by focusing on young people's digital skills in terms of recognising online mis- and disinformation. More specifically, by means of an innovative multi-method study using an online survey, news exposure, and focus groups, we aimed (1) to gain and enhance insight into how 12- to 15-year-olds understand and engage with online news; and (2) to assess to what degree they are able to differentiate between truths and falsehoods and how they arrive at these judgments, and to understand the role of digital skills in these processes.

5.1 Summary of findings

The findings from this study regarding young people's news use practices are in line with previous research that found that social media are their main way of keeping up to date with current events (Sevenhant et al., 2022; Van Damme et al., 2022; Vanwynsberghe et al., 2022), followed by more traditional news channels such as television and radio, and online news sites. However, despite serving as young people's preferred means of staying up to date with the news, social media are the least trusted sources of reliable and credible information (Van Damme et al., 2022), while news sources that are tied to the known traditional broadcasters or newspapers are considered to be more reliable. Our findings particularly illustrate the strong position of public service media in this news landscape: across the entire sample, the news from sources associated with the public broadcaster was seen as the most reliable.

The findings regarding young people's digital skills were in line with earlier findings from the first wave of the ySKILLS longitudinal school survey in six European countries[13]: quite a large proportion of young people reported their technical and operational skills as well as their communication and interaction skills at a high level, while they perceived their information navigation and processing skills and their content creation and production skills to be the lowest. Additionally, the participants in this study were quite optimistic about their news literacy levels. However, it is important to note that these skill levels were based on self-reports, and that such self-reports of skills and abilities could possibly be biased when participants over- or underestimate their skills.

To go beyond this potential bias, we tested young people's skills to evaluate the credibility of online news messages using a performance test. The participants were presented twelve news messages of which six were true and based on real news stories, while six were false and fabricated by the research team. For each news message, the participants were asked to rate the credibility of the message, and to give some more information about how they arrived at their credibility judgement. From this performance test emerged that the participants in this sample estimated the credibility of these news messages correctly: messages that were false were on average perceived as not credible, while the true news messages were generally seen as credible.

Two notes should be made regarding these findings. First, by using a three-item credibility scale rather than a binary yes-or-no question inquiring about the credibility of the news messages, we acknowledge that credibility is a multidimensional and continuous concept rather than a binary one. From this follows that the participants could arrive at different degrees of correctness of their answers

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[13] More information: https://yskills.eu/news-from-the-first-wave-of-the-yskills-school-survey/

regarding their credibility perceptions. For instance, a participant with an average score of 1.5 on the scale and another participant with an average score of 3.4 on the scale both are on the lower end of the scale and hence report that the news message they saw was not credible. Yet, the participants with the lower score seemed to be more sure or more convinced that the news message was not credible than the participants with a higher score on the lower end of the scale. Indeed, while the participants on average rated the credibility of both true and false news messages correctly, it is important to note that the average credibility scores are closer to the centre of the scale, which suggests that the participants may not always have been sure about their credibility evaluations and instead at times indicated the answer option at the centre of the scale.

Second, it should be noted that while a large proportion of participants estimated the credibility of the news messages correctly, a second large group reported scores on the scale that rounded up or down to the centre of the scale, suggesting they found the news messages neither credible nor incredible. There are two potential explanations for this finding. First, it is possible that the participants experienced "survey fatigue" or that they did not put much effort into their answers on the credibility evaluation questions due to a lack of motivation, and instead often resorted to the neutral answer option at the centre of the scale. Second, it is possible that this finding is an indication of a certain lack of credibility evaluation skills or self-efficacy. It is possible that participants who lack the skills or who did not feel confident enough in their skills felt more comfortable to indicate the neutral central answer option of the scale. So even though a large number of participants arrived at a correct credibility evaluation, it is important to place attention on this second large group of young people who do not possess the necessary skills or who do not feel confident enough in their skills to make a judgement.

The focus groups allowed us to gain a deeper insight into the quantitative findings and to further discuss the participants' credibility evaluations. Based on these discussions, we can conclude that the participants in this study generally had a good awareness of the presence of mis- and disinformation on the internet and of the importance of credibility evaluation skills to build resilience and to avoid being misled by such falsehoods. The participants were for instance very aware that the source of online information serves as one of the most important cues that can inform their credibility judgments. However, it seemed that their knowledge about significant credibility cues sometimes remained rather superficial and limited to source and visual cues, and their awareness regarding elements that were less on the surface and less straightforward did not always emerge from their answers during the news exposure phase or during the focus group discussions. For instance, the undertone of the information such as a neutral message versus a message with persuasive intent was not mentioned as frequently as other credibility cues and in many focus group discussions only touched upon after it was mentioned by the moderator.

5.2 Recommendations

The findings from this study hold valuable implications for educators, practitioners, and other relevant stakeholders within the field of young people, media literacy, and news literacy. Information skills, contributing to the collective awareness about the mediated society, can help decrease digital inequalities as well as offline inequalities. The fact that citizens need to be sufficiently digitally literate to fully participate in a strongly digitised society has been on the European policy agenda for over two decades now. The importance of "a digitally skilled population and highly skilled digital professionals" is acknowledged in the ambitious Digital Compass (European Commission, 2021) launched in March 2021. This Digital Compass sets the EC's vision targeting for a successful digital transformation of Europe by 2030[14]. To achieve the 2030 digital decade targets, a governance

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[14] For more information, see Europe's Digital Decade: digital targets for 2030 | European Commission
https://ec.europa.eu/commission/presscorner/detail/en/IP_21_983

framework based on projected trajectories and annual cooperation between the EC and the Member States will be established. To this end, the Member States will need to define national projected trajectories and propose national strategic roadmaps, outlining their plans, to attain them.

In this section, we outline our recommendations for these stakeholders in relation to young people's critical information skills to identify online mis- and disinformation.

First, based on the survey findings from the first phase of the study, we could conclude that the participants estimated their information navigation and processing skills among the lowest in comparison with other skill types. However, even though our data did not show a significant correlation between information navigation and processing skills and the participants' credibility evaluation performance, previous research has shown that these skills, sometimes also referred to with the broader term "information literacy", enable users in the identification of mis- and disinformation (Jones-Jang et al., 2021). The focus group discussions additionally showed that the participants experienced and perceived the difficulty of the credibility evaluation tasks and their subsequent performance during the news exposure phase very differently. Previous research has shown that confidence in one's own skills, often termed "self-efficacy", can be as important to performance and achievement as one's actual skills (Bandura & Locke, 2003), that ICT self-efficacy is linked to computer and information literacies (Hatlevik et al., 2018), and that better ICT skills contribute to a higher ICT self-efficacy (Aesaert et al., 2017). Based on this, we highlight the importance of a continuing allocation of resources to the stimulation of information navigation and processing skills and ultimately credibility evaluation self-efficacy. In this way, we are able to maximally avoid running the risk of young people being misled by online mis- and disinformation due to a decreased confidence in their credibility evaluation skills and a subsequent lack of credibility evaluations of online news and information.

The findings suggest that efforts to build and develop such skills have already been taken: both from the open-ended questions during the news exposure phase as well as from the focus groups discussions emerged that the participants already possessed quite some knowledge regarding online mis- and disinformation, news credibility, and elements that signal less credible messages. However, more subtle and harder to recognize elements such as the undertone of a message seemed to be more often overlooked by the participants. Therefore, as mis- and disinformation are increasingly better disguised as correct and reliable information, further developing the skills that aid in recognising these more subtle elements of a message that point towards a correct credibility evaluation has become crucial.

However, at the same time, it is important to stress that, while continued and deepened efforts aimed at stimulating credibility evaluation skills among young people are crucial, these efforts should be approached with caution. Our findings show that, while a large group of participants on average reported a correct credibility evaluation of the messages they were shown during the news exposure phase, a second large group of participants was situated at or closely around the centre of the scale. Various participants within this group may have reported this score due to a lack of skills or self-efficacy that aids them in arriving at a convincing conclusion. However, it is also possible that some scores around the centre of the scale spring from an attitude towards news that is overly critical and potentially even sceptical. Therefore, it should be highlighted that, while efforts to further stimulate news literacy among young people should continue in order to further develop their skills, we should also be wary of potential adverse effects relating to increased scepticism about mainstream news media and users turning to alternative sources instead (boyd, 2018).

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A.   **Appendix 1: Questionnaire**

Thank you for your participation in our international ySKILLS project. Our goal is to better understand the use of internet and technologies by young people. To achieve this, we are asking you and other young participants European countries about your own experiences.

Here are some instructions about how to fill in the questionnaire.

Please read each question and take your time to answer. This is not a test and there are no right or wrong answers. This questionnaire is all about you, so it is important that you are as honest as possible. All your answers will be anonymised. If there is somebody else around you, ask them to not interrupt you and let you answer the questions alone.

You do not need to answer all of the questions. If you see a question that you cannot answer, or you are unhappy about answering it, please tick "I don't know", "Prefer not to say", or move onto the next question.

Many of the questions are about the internet. Children and young people use the internet in lots of different ways and for lots of different reasons. When thinking about what you do on the internet, keep in mind all the technologies (e.g., laptop or mobile) and places (e.g., at home or somewhere else) where you may use it.

First, we will ask several questions about you.

How old are you?
- 12
- 13
- 14
- 15
- 16
- 17
- Older than 17

What is your gender? Please, select which applies...
- Boy
- Girl
- Other

What language(s) do you speak at home most of the time? Select all, which applies.
(list of local languages in each country including the option "other")

Now, we will ask you a few questions about how you used the INTERNET in the PAST MONTH.

About how long do you spend on the internet during a regular weekday (i.e., school day)?
- little or no time,
- about half an hour

- about 1 hour
- about 2 hours
- about 3 hours
- about 4 hours
- about 5 hours
- about 6 hours
- about 7 hours or more
- I do not know
- Prefer not to say

About how long do you spend on the following social media platforms during a regular weekday (i.e., school day)?

	Little or no time	About half an hour	About 1 hour	About 2 hours	About 3 hours	About 4 hours	About 5 hours	About 6 hours	About 7 hours or more	I do not know	Prefer not to say
Facebook											
Instagram											
Twitter											
TikTok											
YouTube											
WhatsApp											
Facebook Messenger											
Telegram											
Snapchat											
Pinterest											
Reddit											
Discord											

In the past month, how often have you communicated on the internet with my friends or parents (e.g., via Messenger, email, WhatsApp, Facebook, Instagram, etc.)
- Never
- A few times
- At least every week
- Daily or almost daily
- Several times each day
- Almost all the time
- I do not know
- Prefer not to say

Please indicate how true the following statements are of you when thinking about how you use the internet and technologies such as mobile phones or computers. Reply thinking about how true this would be of you if you had to do it now, on your own.

If you do not understand what the question is asking, tick the box I don't understand what you mean by this.

	Not at all true of me	Not very true of me	Neither true nor untrue of me	Mostly true of me	Very true of me	I don't understand what you mean by this	I do not know	Prefer not to say
I know how to adjust privacy settings								
I know how to turn off the location settings on mobile devices								
I know how to protect a device (e.g. with a PIN, a screen pattern, a finger print, facial recognition)								
I know how to store photos, documents or other files in the cloud (e.g. Google Drive, iCloud)								
I know how to use private browsing (e.g. incognito mode)								
I know how to block unwanted pop-up messages or ads								
I know how to use programming language (e.g. XML, Python)								
I know how to choose the best keywords for online searches								
I know how to find a website I have visited before								
I know how to find information on a website no matter how it is designed								
I know how to use advanced search functions in search engines								
I know how to check if the information I find online is true								
I know how to figure out if a website can be trusted								
Depending on the situation, I know which medium or tool to use to communicate with someone (e.g., make a call, send a WhatsApp message, send an email)								

I know when I should mute myself or disable video in online interactions							
I know which images and information of me it is OK to share online							
I know when it is appropriate and when it is not appropriate to use emoticons (e.g. smileys, emojis), text speak (e.g. LOL, OMG) and capital letters							
I know how to report negative content relating to me or a group to which I belong							
I know how to recognise when someone is being bullied online							
I know how to create something that combines different digital media (e.g., photo, music, videos, GIFs)							
I know how to edit existing digital images, music and videos							
I know how to ensure that many people will see what I put online							
I know how to change the things I put online depending on how other people react to it							
I know how to distinguish sponsored and non-sponsored content online (e.g. in a video, in a social media post)							
I know how to reference and use content covered by copyright							

Now, we will ask you a few questions about whether and how you have followed the NEWS in the PAST MONTH.

People can follow the news in different ways. In a few sentences, can you describe how you keep up to date with the news?

(open question)

About how long do you spend following the news during a regular weekday (i.e., school day)? By news, we mean reporting on societal or political events.
- little or no time,
- about half an hour
- about 1 hour
- about 2 hours
- about 3 hours
- about 4 hours
- about 5 hours
- about 6 hours
- about 7 hours or more
- I do not know
- Prefer not to say

How important is following the news to you?
- Not important at all
- Rather not important
- Neither not important nor important
- Rather important
- Very important
- I do not know
- Prefer not to say

How often do you follow the news in the following ways?

	Never	Rarely	Sometimes	Often	Almost all the time	I do not know	Prefer not to say
Television							
Radio							
Printed newspapers							
Online news sites (add local examples here)							
Digital newspapers							
News apps (e.g. Google News, Apple News, add local example)							
Social media							

On which of the following social media platforms do you follow the news?

	Never	Rarely	Sometimes	Often	Almost all the time	I do not know	Prefer not to say
Facebook							
Instagram							
Twitter							
TikTok							
YouTube							
WhatsApp							
Facebook Messenger							
Telegram							
Snapchat							
Pinterest							
Reddit							
Discord							

Please think about journalistic reporting in the news media. Do you believe that the news media (i.e., television news, newspapers, online news sites, …) …

	Completely disagree	Disagree	Neutral	Agree	Completely agree	I do not know	Prefer not to say
Are balanced							
Are objective							
Report the whole story							
Are accurate							
Are honest							
Are believable							

The next questions are about the news media. How would you agree or disagree with the following statements?

	Completely disagree	Disagree	Rather disagree	Neutral	Rather agree	Agree	Completely agree	I do not know	Prefer not to say
News companies choose stories based on what will attract the biggest audience									
Individuals can find news sources that reflect their own political values									
People pay more attention to news that fits with their beliefs than news that doesn't									
Two people might see the same news story and get different information from it									
News coverage of a political candidate will influence people's opinions									
Lighting is used to make certain people in the news look good or bad									

Below are some statements about ways in which people can evaluate the credibility of news. Reply thinking about how true this is of you.

	Not at all true of me	Not very true of me	Neither true nor untrue of me	Mostly true of me	Very true of me	I do not know	Prefer not to say
I make sure that I know all the information about the topic before I evaluate the credibility of the news article							
I evaluate the credibility of a news article in a thoughtful way							
I take the time to study all sides of the story before I evaluate the credibility of a news article							
Researching the facts is important to me for evaluating the credibility of a news article							
When I evaluate the credibility of a news article, I trust my gut feeling							
I trust my first impression about a news article when I evaluate its credibility							
I find my feeling more important than careful reflection when I evaluate the credibility of a news article							
When I evaluate the credibility of a news article, I only focus on certain aspects of the message instead of analyzing the entire message							
I do not spend much time when I evaluate the credibility of news							

How often do other people of your age share misinformation in the internet? With misinformation, we mean any information that is posted online that is not true (such as false news or gossip).

- Never
- Rarely
- Sometimes
- Often
- Almost all the time
- I do not know
- Prefer not to say

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How often do other people of your age use the following platforms for sharing misinformation? With misinformation, we mean any information that is posted online that is not true (such as false news or gossip).

	Never	Rarely	Sometimes	Often	Almost all the time	I do not know	Prefer not to say
Facebook							
Instagram							
Twitter							
TikTok							
YouTube							
WhatsApp							
Facebook Messenger							
Telegram							
Snapchat							
Pinterest							
Reddit							
Discord							

On the internet, you may encounter to online contents that target individuals or communities on identified or supposed characteristics based on religion, origin, colour of skin or culture. This may cause people feeling they are treated unfairly because of their physical or personal characteristics, for example because of their physical appearance, their religion, where they come from or how they speak.

In the PAST 12 MONTHS, have you EVER seen hateful or degrading messages or comments online, against people or certain groups of people? (This could for example be Muslims, Migrants, Jews, Roma, etc.)?
- Never
- Once
- A few times
- At least every month
- At least every week
- Daily or almost daily
- I do not know
- Prefer not to say

Considering such content on the internet, to what extent would you agree or disagree with the following statements? Such content…

	Completely disagree	Disagree	Rather disagree	Neutral	Rather agree	Agree	Completely agree	I do not know	Prefer not to say
is just a part of using the internet									
does not have any long-lasting effects									
does not cause any real harm									
is not as serious as, for example,									

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beating somebody up								
no one has ever died because of this								
there is nothing wrong with posting such content								

In the PAST 12 MONTHS, have you EVER received hateful or degrading messages or comments online, against you or your community? (This could for example be against Muslims, Migrants, Jews, etc.)?

- Never
- Once
- A few times
- At least every month
- At least every week
- Daily or almost daily
- I do not know
- Prefer not to say

And in general, either online or offline, in the PAST 12 MONTHS, have you sometimes felt that you were treated badly in your daily life because of….

	Never	Once	A few times	At least every month	At least every week	Daily or almost daily	I do not know	Prefer not to say
your origin								
your skin colour								
your religion								
how you look like								

Which of the following best describes your financial situation and that of the people with whom you live?

- We live very well – We can purchase luxury items, like [ADD LOCAL EXAMPLES], and still have money left over
- We live well – We have enough money to afford most things without having to save for them
- We get by ok – We have enough for everyday things, but we have to save for more serious purchases and expenses
- We live modestly – We have to manage our money carefully and limit our daily spending
- We struggle to get by – We sometimes do not have enough money to afford basic needs, such as food and clothes
- I do not know
- Prefer not to say

Now, we will ask several things about you.

In general, how would you agree or disagree with the following statements?

	Never	Almost never	Sometimes	Often	Always	I do not know	Prefer not to say

When a friend is scared, I feel afraid						
When my friend is sad, I become sad too						
When a friend is angry, I feel angry too						
When people around me are nervous, I become nervous too						

In general, how true are these things of you?

	Not true	A bit true	Fairly true	Very true	I do not know	Prefer not to say
It is easy for me to stick to my aims and achieve my goals						
I can solve most problems if I try hard						
If I am in trouble I can usually think of something to do						
I can generally work out how to handle new situations						

In general, considering people around you, how easy or difficult are following things for you?

	Very difficult	Difficult	Not difficult, not easy	Easy	Very easy	I do not know	Prefer not to say
Listen carefully to someone who told you about a problem he or she is experiencing							
Comfort someone who is feeling down							
Help others cope with an unpleasant experience							
Help someone when he or she asked you							
Help someone to feel at ease							

In general, how much do you agree or disagree with the following statements?

	Completely disagree	Disagree	Neutral	Agree	Completely agree	I do not know	Prefer not to say
I don't like to have to do a lot of thinking							
I try to avoid situations that require thinking in depth about something							
I prefer to do something that							

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challenges my thinking abilities rather than something that requires little thought						
I prefer complex to simple problems						
Thinking hard and for a long time about something gives me little satisfaction						

This is the end of the questionnaire. Thank you for your participation.

Appendix 2.1   Stimuli exposure moment 1

Appendix 2.2   Stimuli exposure moment 2

Dossier LGBTQ+
05u26

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Instagram bans all posts about treatment of homosexuality

Instagram announced the blocking of all posts on social networks that promote the so-called conversion therapy - that is, a change in the person's sexual orientation towards heterosexuality.

facebook

Annie Blondie
1 uur geleden · 🌐

Ik kan niet geloven dat die twee leerlingen zijn geschorst van school en zo duivels voorgesteld worden... Overgewicht hebben is zoveel schadelijker voor een persoon dan gewoon "dik" genoemd te worden. Als het meisje niet dik genoemd wil worden, dan moet ze misschien wat afvallen, het is niet zo moeilijk. Ik ben vlot afgevallen door een geweldig dieetproduct te gebruiken:
http://amazingdiet.15days.com/get_free_pills/pll56usap8855

👍❤️ 4   3 opmerkingen

👍 Vind ik leuk   💬 Opmerking   ↪ Delen

Mirte Bloem Alles wordt tegenwoordig als pesten gezien. Vroeger wanneer ik nog op school zat was het totaal normaal dat kinderen elkaar plaagden
Vind ik leuk · 1h

Seppe Cuypers De reactie van de school was echt overdreven
Vind ik leuk · 1h

Morgan de Vries Ik denk dat het wat ingewikkelder is dan dat
Vind ik leuk · 1h

Schrijf een opmerking...   😊 📷 📁 🎁

news24/7

♡ 💬 ✈   🔖

Liked by cato_willems and 104 others
news24/7 Hanki, age 14, created security forces against hate online from young climate activists. Recently, hate online has appeared as a constant threat towards underaged activists. Security forces monitor cases and collaborate with the police.
#youth #climate #activism #hateonline #violence
View all 2 comments
jolien_vdm Well done Hanki! <3 Like to join!
quinten2002 No sense, no need for climate activism
1 HR

facebook

HLN.be
1 hour ago · 🌐

Did you post a rainbow flag on you social media account? 🏳️

HLN.BE
People express their support to the LGBT+ community by posting rainbow flags on social media

👍❤️😆 21.000   723 Comments 79 Shares

👍 Like   💬 Comment   ↪ Share

Mirte Bloem Sharing a 🏳️ is a sign of empathy, to let others know that you support the LGBT+ community.
Like · Reply · 1h   👍❤️ 2

Seppe Cuypers I don't think that sharing a rainbow flag will help the LGBT community 🤷 ...opinions won't change... police need to do more
Like · Reply · 45m   👍❤️😆

Morgane Vries YES I DID! I want to express my support to all my gay friends. They are great people! I don't understand why they receive so many bad reactions 😠
Like · Reply · 30m   👍❤️😆

Write a comment...   😊 📷 📁 🎁

elis_horakova

♡ 💬 ✈   🔖

Liked by jolien_vdm and 42 others
elis_horakova I can't tell you how much time I've wasted worrying about how I look, hiding my body as much as I could and avoiding PE classes. For years, I have put all my time and energy to losing weight. But my hair started to fall out and my weight always came back. The breaking point came when I visited my doctor and she started yelling at me that I clearly don't care about myself and how could I've let myself get so fat. But all I did was caring about my weight. So much that I have developed a very unhealthy relationship to food. Eventually, I realized that I can't harm my body with strict unhealthy dieting anymore and that I have to cherish my body the way it is. I've accepted that I'm never going to be like the thin women you see in the movies. And that's okay. Every body deserves to be loved and cared for no matter the size or shape.
#bodypositive #allbodiesarebeautiful
View all 3 comments

Games.biz
@gamesbiz

Survey says 59% of girls hide gender to avoid harassment while gaming online

Yesterday · ·

💬   🔁 1 Retweets   ♡ 16 Likes   ↥

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Appendix 3: Discussion guide for focus groups

INTRODUCTION 3 min	Today we would like to talk with you about how you get information related to what is happening in the world, in your country and in your city. We are going to discuss also about how you decide if this information is credible or not. In this study our aim is to find out young people's experiences and thoughts to these topics and you are invited to participate in this research to help us to better understand it. There are no right or wrong answers in our discussion, and we are not going to grade what you are telling.
NEWS CONSUMPTION 5 min	At first, we would like to ask you how important it is for you to be informed about latest news close to you and far away from you? **Where** do you usually get information about what is happening in the world? **How** do you access this information?
REFLECTING ON STIMULI 20 min	Last week in the research you have seen different examples of news. (SHOW PRINTED STIMULI). We would like to talk today more about them. How difficult was it for you to decide whether information in these cases was credible or not? Which elements were the most important in your decision? Were the elements the same across all cases? Did you look at different elements depending on the source? For example, how? Now we would like to ask you to tell us about a few cases separately: What elements help you to understand whether information is credible or not in this moment? (SHOWING PRINTED STIMULI: an article about a research on women playing video games) Here is an article about how students treated their classmate online. How would you tell about this case to your friend (classmate case only)? If you saw something like this happening, what would be your reaction? why? (showing classmate case)
RELIABLE & NOT RELIABLE INFORMATION SOURCES 7 min	These were questions about cases you have seen last week in the research. Now we would like to ask about your daily experience. How often you ever find out/experience that information about latest news is false/fake? What makes or helps you to understand whether information is credible or not? In your consideration, what are the most **the most trustable and the most unreliable sources** of news of latest events for you? What makes them trustable? What makes them unreliable for you?
AWARENESS OF THE LOGIC OF SOCIAL MEDIA AND ITS INFUENCE ON CREDIBILITY OF INFORMATION 10 min	To conclude, we discuss social media and communication. **How have the social media tracked you, in your opinion?** Please, tell an example, how service providers use the data which they have collected from you. **Please describe,** how your favourite social media platforms make their money? **What do you think, is the social media spreading false information?** **In your opinion, what role does social media play in the spread of false information?** Would like to add something that has been missing from our questions relating social media communication? How would you evaluate this research based on your experience?

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GENERAL INFORMATION AND INFORMED CONSENT FORM
FOR ADOLESCENTS (13- AND 15-YEAR-OLDS)

Thank you for considering your participation in our study! Your cooperation is greatly appreciated and will be important for the ySKILLS project.

What is the ySKILLS project?

ySKILLS is a four-year international project running under Horizon 2020 research programme. Our goal is to better understand the use of the internet and technologies by young people and to **understand what digital skills are important to be safe online and to benefit from opportunities on the internet.**

What will happen if I take part in this study?

The goal of this study is to gain insight into **young people's engagement with online news regarding instances of cyberhate and information disorders.** Participation in this study involves **three phases. First,** you will fill out a **short questionnaire** about your internet use and news consumption. **Next,** during four moments over the course of two school days, **you will be shown various news messages** about cyberhate and information disorders, and you will be asked some questions about these concrete messages**. Lastly,** you will be invited to participate in a **focus group conversation** where you will be able to discuss you experiences from those two days with your peers.

How long will it take?

Filling out the **short questionnaire** at the beginning of the study will take you **about 20 minutes.** Next, you will be shown some **news messages about which we will ask you some questions.** This will happen during **four moments,** spread over **two school days,** and we estimate that each moment will take **about 15 minutes. The focus group discussion** that is organized afterwards will take **about 1 class hour.** During each of these phases, a trained researcher will be present in the classroom to guide you and answer any questions you may have about the study.

Can I change my mind about taking part in the study?

Of course! At any point, you can decide that you do not want to take part in the study anymore. Be reassured that this is okay and there will be no negative consequences for this.

Should I prepare for the study in advance?

There is nothing to prepare in advance, you will only need your **smartphone** (or the teacher may provide another device, such as a laptop, to access the internet in the classroom).

Is the study anonymous?

Yes, all data will be anonymised and therefore cannot be connected directly to you. This means no one (for example your parents, teachers, or classmates) will be able to link your answers in the questionnaire to you.

How will the anonymisation be done?

Because the study takes place over multiple days, we need to link your responses to the questions across the different data collection moments. Since the study is anonymous, we will not use your name to link these different responses. Instead, you will use **a code or nickname** to access the questions, and with this code we will be able to link your answers from the different data collection moments without being able to know who exactly filled out the answers.

Are there any risks in taking part in this study?

We do not anticipate any obvious risks or disadvantages of participation in this survey. It is however possible that some questions might be uncomfortable to answer. However, you do not have to answer the questions if you don't want to. With any questions or comments about the survey, you can always turn to the ySKILLS researcher present in the classroom. You can also turn to your teacher, or school advisor for answers or support.

Can I find out more information about the study?

If you have any questions or concerns about the research, please feel free to contact the ySKILLS responsible researcher [NAME] on this email address [EMAIL OF RESEARCHER] or on this phone number [PHONE NUMBER OF RESEARCHER].

<div align="center">

Informed Consent

</div>

We would kindly ask you to read the following information carefully**. Please note that by signing this document you confirm that you understand and agree to the following:**

- I have read the information sheet for this study and fully understood its content.
- I give my consent to this research project.
- I understand that participation in this project is voluntary and that it is possible to withdraw from participation at any time.

If you agree with the content, please provide us with your signature at the bottom of this form, add a date and return it to us via email to [EMAIL OF RESEARCHER]

My name (Please write your name clearly):
_____

Date: _____

My signature: _____

GENERAL INFORMATION AND INFORMED CONSENT FORM
FOR PARENTS AND LEGAL GUARDIANS

Thank you for considering your child's participation in this study, which is carried out as part of the ySKILLS ("Youth Skills") project. Your cooperation is greatly appreciated and will be important for the Project.

About our project
ySKILLS is a four-year project running under the European Union's Horizon 2020 Research and Innovation Framework Programme. We aim to **understand what digital skills children and young people need nowadays to be safe online and benefit from opportunities on the internet.** Collecting information on these current topics is important for many people including educators and policymakers, but also for parents like you, and young people themselves. For more information about the project, please visit: https://yskills.eu/

The data collection
This study aims to gain insight into 13- and 15-year-olds' skills regarding **online news consumption**. In this study, we will specifically focus on news regarding an increasingly relevant issue for children and young people – online hate speech as well as information disorders. To achieve this, this study consists of **three phases** in which the children will participate in class during school hours. The first phase consists of a **short questionnaire** regarding their digital skills, news consumption, and experiences with cyberhate and information disorders, which will take them about 20 minutes to complete. Next, they will be **shown news messages** concerning instances of cyberhate and will be asked to answer a few questions about these messages. This news exposure phase will take place during **four moments spread over two school days**, and each moment will take about 15 minutes. Both the questionnaire and the news exposure phase will take place digitally on the child's smartphone (in a safe app environment that has been designed specifically for this study) or on another device on which the internet can be accessed that is provided by the teacher or school, such as a school laptop. The children participating in the study can skip any of the questions, if she or he does not want to answer it or select the choice "I don't know" or "Prefer not to say". Lastly, the children will be invited to participate in **focus group conversations** where their experiences regarding the news exposure will be discussed and where they get the chance to voice any concerns they may have regarding the study. This group discussion will take about 1 class hour. During each of these phases, a **trained researcher** will be present to guide the children and to provide answers to any questions they may have regarding the research. The children do not have to prepare anything in order to be able to participate in the study.

Consent is voluntary and can be withdrawn at any time
Your child decides if she or he wants to take part in the study and, at any point, they or you can decide that they won't be participating anymore. **Be reassured that this is okay and there will be no negative consequences for your child.**

Confidentiality
All data will be anonymised and therefore cannot be connected directly with your child. Because the online data collection takes place during multiple moments over two days, we will need to link the data across these moments. This will be done via a code, which will be used for each child, but the link with the child's identity will be kept separately from the data we obtain from your child. Thus, **it will not be possible to identify your child based on the data**. This means no one (for

example teachers, classmates, or parents) will be able to link your child's answers in the study to him or her.

After the end of the data collection and finalising the data, all stored information needed for linking the data across the data collection moments will be deleted. The procedure follows the GDPR rules and ethical codex of social science surveys. The data from this study will be used only for research purposes.

Potential risks and discomforts
We do not anticipate any obvious risks or disadvantages of participation in this survey. It is however possible that some questions might be uncomfortable to answer. However, children do not have to answer the questions if they do not want to. With any questions or comments about the study, they can always turn to the trained administrator. They can also turn to their teacher, or school advisor for answers or support.

Contact information
If you have any questions or concerns about the research, please feel free to contact the ySKILLS responsible researcher [NAME OF RESEARCHER] on this email address [EMAIL OF RESEARCHER] or on this phone number [PHONE NUMBER OF RESEARCHER].

Informed Consent

We would kindly ask you to read the following information carefully**. Please note that by signing this document you confirm that you understand and agree to the following:**
- I have read the information sheet for this study and fully understood its content.
- I give my consent to the participation of my child in this research project.
- I understand that participation in this project is voluntary and that it is possible to withdraw from participation at any time.
- I permit my child's data to be retained and used in future research within the ySKILLS project.
- I understand that the anonymous data from this study may be published in academic publications, shared in an open archive.

If you agree with the content, please provide us with your signature at the bottom of this form, add a date and return it to us via email to [EMAIL OF RESEARCHER]

My child's name (Please write his/her name clearly):

 _____

My name (Please write your name clearly):
_____

Date: _____

My signature: _____